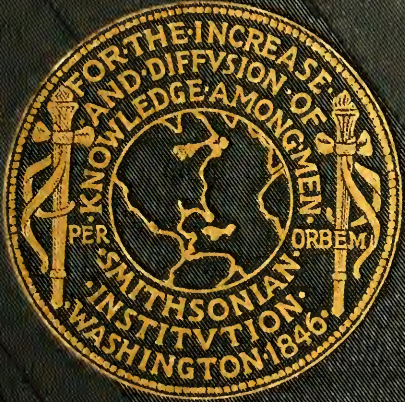
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SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
BULLETIN 172

BIRDS FROM SIAM AND THE MALAY PENINSULA IN THE UNITED STATES NATIONAL MUSEUM COLLECTED BY DRS. HUGH M. SMITH AND WILLIAM L. ABBOTT

BY

J. H. RILEY

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The present work forms No. 172 of the *Bulletin* series.

Alexander Wetmore,
Assistant Secretary, Smithsonian Institution.

Washington, D. C., *October 18, 1938.*

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BIRDS FROM SIAM AND THE MALAY PENINSULA IN THE UNITED STATES NATIONAL MUSEUM COLLECTED BY DRS. HUGH M. SMITH AND WILLIAM L. ABBOTT.

By J. H. Riley

INTRODUCTION

This catalog of birds is founded upon large collections made by Dr. Hugh M. Smith in Siam, covering almost the entire country from Patani in Peninsular Siam to Chiengdao in the north, and the collections of the late Dr. W. L. Abbott, made in Trang, the Malay States, and some of the islands off the coast of western Peninsular Siam.

Dr. Hugh M. Smith went to Siam in 1923 as adviser and expert in fisheries to his Siamese Majesty's Government, to investigate and develop the fish resources of the country. In addition to his official duties, he immediately began collecting material in other branches of natural history in his spare time and forwarding the results to the United States National Museum.

Dr. Smith collected in eastern and southeastern Siam early in 1924 and visited Koh Chang, a large mountainous island lying about 10 miles off the coast of the southeastern part of the country. Not many birds were collected on this visit, however. In May he visited Bangnara, Patani, and later in the year returned to southeastern Siam. He collected there and around Bangkok for the remainder of the year and early the following year.

On January 1, 1926, Dr. Smith went to Koh Chang again, then explored the adjacent country and the Korat Plateau, revisited Bangnara and Patani, and made collections in Nakon Sritamarat and Koh Tao, off Bandon. In addition, he made collections around Bangkok.

Dr. Smith was still on Koh Tao early in 1927 and then collected on the mainland for a few days, returning to Bangkok. From there he went to eastern and southeastern Siam and was back in Bangkok late in March.

Early in April 1928 he collected in Kanburi, then in southeastern Siam early in May, in Pran, southwestern Siam, late in May and early in June, and in Nakon Sritamarat early in July, where he visited Kao Luang, the highest mountain in the vicinity. He returned to Kanburi early in September, then went to Koh Tao once more; visited Kao Seming and Krat early in October and reached Lampang, northern Siam, by the middle of November; went to the Khun Tan Mountains a few days later, collecting at 3,000–4,500 feet; then visited Chiengmai toward the last of the month. From Chiengmai he went, on December 1, to Chomtong and to Doi Angka (or Intanon), the highest mountain in Siam, which rises to 8,500 feet. He remained there until December 9 and then returned to Chiengmai and on the 14th and 15th ascended Doi Sutep, the mountain back of the city, 5,600 feet high. By December 22 he was again in Bangkok.

In mid-February 1929, Dr. Smith began collecting on the Korat Plateau, visited Vientiane, Laos, and went down the Mekong to Ban Nakae. He collected in eastern Siam until the middle of April, from there going to Koh Kut on May 20 for a few days. A short time was spent at Chantabun. He was in Singora and at the Tale Sap from June 29 to July 12, and at Lat Bua Kao, eastern Siam, by July 29, where he remained until August 14. Collecting was begun at Sichol, Bandon, on August 28 and continued until September 5. He visited Kanburi, September 19 to 26; Khun Tan, October 16 to 28; Pak Chong, eastern Siam, November 16 to December 9; Krat, southeastern Siam, December 20, 1929, to January 1, 1930, where collecting was done on Kao Bantad, Kao Kuap, and Kao Seming.

Dr. Smith reached Kao Sabap, Chantabun, an isolated peak a little over 3,000 feet high, on January 5, 1930, and collected there until the 9th. He continued to collect in southeastern Siam until about the middle of March, proceeding thence to Prae, northern Siam, where he arrived on April 10. He reached Nan on April 16, returned to Prae on April 26, and to Bangkok on May 5. He then revisited Sichol, Bandon, on May 15 and remained until the 28th. Three birds were collected at Koh Sichang, July 3–5. Dr. Smith was also at the following places: July 10–23, at Aran, eastern Siam; August 23–September 10, at Khun Tan; and October 1–10, at Kao Luang, Nakon Sritamarat. He visited Doi Nangka, a mountain mass north of Chiengmai, about 5,000 feet high, November 2–22, then went to Kao Lem and Tha Chang, eastern Siam, December 25, 1930, to January 2, 1931. Tha Chang and Kao Lem are in a wild and rugged mountainous region northeast of Bangkok.

Dr. Smith then went to Patani, Peninsular Siam, where he collected at Bukit, January 23–25, and at Yala, January 30–February 2. After returning again to Bangkok, he went to Pran on April 1 and remained there until April 4, revisiting Doi Nangka, a wild mountain region northeast of Chiengmai, April 22 to May 6. Some time was spent from June 26 to 30 at Lem Sing and Kao Sabap, mountains in southeastern Siam, and at Koh Pangan (also written Pennan) and Koh Samui, off Bandon, July 22 to August 7. From August 31 to September 2, Dr. Smith was at Koh Samet, a forest-clad hilly island near the mainland in southeastern Siam.

He collected at Tha Lo, Bandon, in the upper valley of the Tapi River, from September 13 to 30, going then to Nong Yang, Sriracha. Collecting was done at various localities in southeastern Siam until November 16, and at Hin Lap, eastern Siam, from December 6 to 12.

In 1932 Dr. Smith collected at Chiengdao, northern Siam, on January 28, and remained there until February 1, spent February 3 on Doi Sutep, then moved to Mekhan on the 6th and remained there until the 9th, collected in the Khun Tan Mountains, February 13 to March 4, and visited Bung Borapet, a large swamp in central Siam, June 19 to July 1; then went to Sriracha and vicinity, July 22 to August 9; Hin Lap, September 28 to October 3; Gengkoi, October 16; the Pasak Valley, October 18 to 23. The Pasak River is a long and tortuous stream marking the boundary between Central Siam and the eastern plateau. Stretching eastward from the river is a vast primeval-forest jungle abounding in big game.

In the last months of the year collections were made at the Sam Roi Yot (Three Hundred Peaks), in southwestern Siam, and in the mountain-forest jungle of the northwestern corner of Siam.

At the beginning of 1933, work was continued in the northwest, and an expedition started from Chiengmai, headed northwesterly, crossed a dozen mountain ranges, and reached the remote town of Mehongsorn on the Pai River, a tributary of the Salwin. The party then descended the Salwin in dug-out canoes, camping at night on sandbanks, either on the Burmese or Siamese side of the river, until Moulmein, Burma, was reached on February 3, 1933. Much of the region traversed was primeval-forest jungle, abounding in big game.

Bung Borapet, a vast swampy area, was revisited from March 21 to 30. The swamp has been dammed and converted into a permanent lake, where immense numbers of fish-eating and marsh-inhabiting birds occur together with kites, hawks, and vultures.

Dr. Smith collected at Muek Lek, eastern Siam, April 16–28; in the Khun Tan Mountains, May 9–18; and at Koh Lak, southwestern Siam, June 5–25. He visited Kao Chong, Trang, Peninsular Siam, August 23 to September 13. Trang is the province in which Dr. W. L. Abbott had collected more than 30 years previously. He again went to Kao Sabap in southeastern Siam, October 23–November 26. According to Dr. Smith, Kao Sabap is covered with evergreen forest and is largely in a primeval condition. Returning to Trang, Dr. Smith collected on Kao Soi Dao, December 20, 1933, to January 29, 1934.

He went to Petchabun in central Siam on February 14 and Lomsak on the 16th, and collected at Kao Pae Pan Nam on the 18th and 19th, Vichienburi on the 27th, and Ban Nam Phu on the 28th.

Dr. Smith collected at the following places from March 12 through September 7: Wang Kien, Kanburi, March 12–17; Bangkok, March 29–April 5; at Sriracha, April 19–20; Bangkok, April 27–May 14; Lamton Lang, Pak Chong, May 25–June 2; Chantuk, June 7–17; Pak Chong, June 20–26; on Doi Phra Chao or Meru Sawan, August 1–7; and on Doi Hua Mot, August 12 to September 7, 1934. These two mountains belong to the same mountain mass as Doi Nangka, and the last mentioned reaches a height of 6,000 feet.

Dr. Smith's collecting in Siam came to an end at this point, and he returned to the United States. While on duty in Siam, he covered all the territory fairly well from Patani in southern Peninsular Siam to the northern boundary, and the eastern, southeastern, and southwestern parts of the country. Many localities were visited more than once; some several times. Dr. Smith's residence was in Bangkok, and many birds were taken in the vicinity in the intervals between field trips.

During his residence in the country, Dr. Smith forwarded to the United States National Museum a total of 6,459 bird skins, 96 bird skeletons, and 43 birds' eggs, besides large collections in other branches of natural history. This is a remarkable record when one considers that his primary object was to investigate the fish resources of the country.

The following new forms of birds were described by me from Dr. Smith's collection:

Arborophila diversa.
Cirropicus chlorolophus conjunctus.
Psarisomus dalhousiae cyanicauda.
Garrulax ferrarius.
Pellorneum smithi.
Corythocichla brevicaudata cognata.
Sibia picaoides cana (*Heterophasia picaoides cana*).
Alcippe nipalensis eremita.
Ixos canescens.
Heteroxenicus nangka (*Brachypteryx leucophris nangka*).
Myophonus temminckii changensis (*Myophonus crassirostris*).
Niltava smithi (*Niltava vivida oatesi*).
Niltava grandis nobilis.
Hypothymis azurea montana (*Hypothymis azurea styani*).
Rhipidura albicollis celsa (*Rhipidura albicollis albicollis*).
Terpsiphone sababensis.
Aethopyga nipalensis angkanensis.
Dicaeum umbratile (*Dicaeum beccarii cambodianum*).
Piprisoma modesta pallescens.
Zosterops palpebrosa vicinia (*Zosterops palbebrosa cacharensis*).

LOCALITIES IN SIAM AND ADJOINING PARTS OF FRENCH LAOS, CAMBODIA, AND BURMA WHERE NATURAL-HISTORY COLLECTIONS WERE MADE BY DR. HUGH M. SMITH, 1923–1934

Since there are no good modern maps of Siam known to me, and since many of Dr. Smith's localities would not appear in any case, I give a list of collecting localities, prepared by Dr. Smith.

ABBREVIATIONS[1]

C= Central Siam.
N=North Siam.
E=East Siam.
W=West Siam.
NW=Northwest Siam.
SE=Southeast Siam.
P=Peninsular Siam.

GEOGRAPHICAL DEFINITIONS

Ao: Bay.
Ban: Village.
Bang: Village.
Bung: Marsh.
Buri: Town.
Chieng: City or town (Lao).
Doi: Mountain (Lao).
Hin: Rock or stone.
Huey (or *Hui*)*:* Creek or brook (often dry).
Kao: Mountain (Siamese).
Klong: Canal or stream.
Koh (or *Kaw*)*:* Island.
Kwan: Lake (Lao).
Kwe (or *Gwe*)*:* Fork (of a river).
Lem: Point or cape.
Me: River or stream.
Menam: Large river, principal river of a district.
Muang: an administrative district or town.
Nakon: Town or city (written also *Nakawn*, *Angkor*, *Lacon*, or *Lakon*).
Noi: Small.
Pak: Mouth (of a river).
Paknam: River mouth.
Pang: Village.
Tha: Crossing.
Wieng (or *Vieng*)*:* City.
Yai: Large.

LOCALITIES

Amphar Klong: A stream near Kao Sabap; SE.
Angtong: Village on the Menam Chao Phya north of Ayuthia; C.
Aran (written also Aran Pratet, Aranya Pradesha, Aranya, etc.): Village and railway station near Cambodian border; E.
Ayuthia (written also Ayudya, Ayudhya, Ayutaya, etc.): Ancient city on Menam Chao Phya about 40 miles north of Bangkok; C.
Ban Bua Chum: Village on the Pasak River; C.
Ban Chai Montri: Village on Klong Tadi, Nakon Sritamarat; P.
Ban Chan: Village on Klong Tadi, Nakon Sritamarat; P.
Ban Chumporn (or **Pon Pisai**): Village on the Mekong; E.
Ban Den (or **Ban Den Ja**): Village on the Mekong; E.
Ban Foe Hilom: Village on the Mekong; E.
Ban Haad Hai: Village on the Mekong; E.
Ban Han: Village near Udon; E.
Ban Hin Ngom: Village on the Mekong near Nong Kai; E.
Ban Hoa Kam (also written Ban Ho Kam): Village on the Mekong; E.
Ban Hoi Tah: Village west of Nakon Sritamarat; P.
Ban Huey Ok: Village on the Mepai; Burma.
Ban Huey Ta: Village (700 feet) at base of Kao Luang, west of Nakon Sritamarat; P.

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[1] See description of the zoogeographical divisions of Siam, p. 16.

Ban Kam Pran: Village on the Pasak River; C.
Ban Kang: Village on lower slope of Doi Angka; N.
Ban Keng Sadok: Village on the Mekong; French Laos.
Ban Kiriwong: Village near head of Klong Tadi, Nakon Sritamarat; P.
Ban Ko Tan: Village on the Mekong, in Nakon Panom; E.
Ban Lem Ngao: Village on Klong Tadi, Nakon Sritamarat; P.
Ban Manoa Wan: Village on the Pasak River; C.
Ban Mekok: Village on the Pasak River; C.
Ban Mekong: Village on the Mekong; E.
Ban Melao: Village (725 m) on the Melao, northwest of Chiengmai; N.
Ban Mor: Village on Klong Tadi, Nakon Sritamarat; P.
Ban Na Luang: Village on the Mekong; French Laos.
Ban Nakae (or **Nake**): Village on the Mekong near Nakon Panom; E.
Ban Nam Kien: Village near Nan; N.
Ban Nam Phu: Village between Tapan Hin and Pasak River; C.
Ban Nong Dern Ta: Village on the Mekong; E.
Ban Nong Keng: Village; E.
Ban Ong: Village on the Salwin River; Burma.
Ban Pan: Village on the Sikuk River; C.
Ban Pang: Village on the Menam Chao Phya; C.
Ban Peng Sao: Village west of Nakon Sritamarat; P.
Ban Phradieng (also written **Padieng**): Village northwest of Chiengmai; N.
Ban Pong: Village on the Mekong north of Rajaburi; C.
Ban Prakieng: Village on Klong Tadi, Nakon Sritamarat; P.
Ban Sadet: Village between Sriracha and Hupbon; SE.
Ban Sob Pa: Village on the Salwin River; Burma.
Ban Sok: Village on Klong Sok, Tapi River; P.
Ban Ta Pai: Village northwest of Chiengmai; N.
Ban Ta Pla: Village on the Mekong; E.
Ban Ta Yai: Village on Klong Tadi, Nakon Sritamarat; P.
Ban Tadi: Village on Klong Tadi, Nakon Sritamarat; P.
Ban Taeng: Village near Korat; E.
Ban Tai: Village on the Mekong; E.
Ban Takaw: Village on the Pasak; C.
Ban Taoten: Village on the Mekong near Nakon Panom; E.
Ban Tarn Dam: Village near Sriracha; SE.
Ban Tawai Phra: Village on the Pasak River; C.
Ban Tha Yai: Village west of Nakon Sritamarat; P.
Ban Ton: Village on the Mekong; E.
Ban Tung Kwa Tao: Village on the Salwin River; Burma.
Ban Un Pai: Village on the Mepai; Burma.
Ban Wang Paen: Village on the upper Meyom, northeast of Lampang; N.
Ban Yan Sue: Village on Klong Tadi, Nakon Sritamarat; P.
Bandon (called also **Surat** and **Surashta Dhani**): Large town on the Bandon River; P.
Bang Than: Village near Bangkok; C.
Bang Torani: Village north of Bangkok on the Menam Chao Phya; C.
Bangbert: Bay and community on Gulf of Siam, north of Chumporn; P.
Banghia: River and village east of Bangkok; C.
Bangkok (called also **Krungdeb** or **Krungtep**): Capital of Siam, on the Menam Chao Phya; C.
Bangnara (known also as **Naratiwat** or **Naradhivas**): Village on the China Sea south of Patani; P.
Bangpakong: Large river (and village near its mouth), east of Bangkok; C.

Bangplasoi (called also Cholburi, Chonburi, and Jolburi): Town at northeast corner of Gulf of Siam; C.

Bangsai: Village on the Menam Chao Phya; C.

Bangsorn: Suburb of Bangkok on the Menam Chao Phya; C.

Bangsuk: Village near Pak Chong; E.

Bawka (or **Bohka**): Fishing village on west side of Gulf of Siam near Chumporn; P.

Bo Ploi: Village north of Kanburi; C.

Bua Sum: Village on the Pasak River; C.

Bua Yai: Village north of Korat; E.

Bukit: Village in Patani; P.

Bung Borapet: Large swamp-lake near Paknampo; C.

Bung Tabgrit: Swamp near Bung Borapet; C.

Chaibadan: Town on the Pasak River; C.

Chainad (written also Chainat and Jainad): Town on the Menam Chao Phya north of Ayuthia; C.

Chaiya: Village on the west side of the Gulf of Siam north of Bandon; P.

Chantabun (written also Chantaboon and Chantaburi): Town; SE.

Chantuk: Near Pak Chong; E.

Chiengdao: Village on the Meping near base of Doi Chiengdao; N.

Chiengmai: City on the Meping; N.

Chiengrai: Town on tributary of the Mekong; N.

Chomtong (written also Chawmtawng): Town on the Meping southwest of Chiengmai; N.

Chonburi (or **Cholburi**): (See Bangplasoi.)

Chong Yam: Village on the Salwin River; Burma.

Chumporn (written also Chumpon, Chumpawn, Jumbara, etc.): Large town on west side of Gulf of Siam; P.

Darn Khun Thod: Village west of Korat; E.

Doi Angka (called also Doi Intanon): Highest mountain in Siam (8,600 feet) southwest of Chiengmai; N.

Doi Bata (or **Pata**): Mountain near Pai; N.

Doi Buak Hua Chang: Mountain northwest of Chiengmai; N.

Doi Chiengdao: Second highest mountain in Siam (7,169 feet), north of Chiengmai; N.

Doi Hua Mot: Part of the same mountain mass as Doi Nangka; N.

Doi Intanon: (See Doi Angka.)

Doi Kao Lip: Mountain (1,600 m), near Salwin River; Burma.

Doi Kiew Koh Ma: Mountain (1,400 m) northwest of Chiengmai; N.

Doi Kinchong: Mountain of the Melang Valley; N.

Doi Mana: Mountain (1,450 m) west of Pai; N.

Doi Nangka: Mountainous area northeast of Chiengmai; N.

Doi Pang Wua Jao: Mountain near the Salwin River; Burma.

Doi Phra Chao or **Meru Sawan**: Part of the same mountain mass as Doi Nangka; N.

Doi Sutep (or **Suteb**): Isolated mountain (5,600 feet) west of Chiengmai; N.

Doi Tin Pata: Mountain near Pai; N.

Gengkoi: Village and railway station on the Pasak River; C.

Haad Yai: Village and railway junction; P.

Hang Nor Wu: Village on the Salwin River; N.

Hang Tum Kai: Village on the Salwin River; N.

Hangkraben: Branch of the Menam Chao Phya north of Ayuthia, important fishing community; C.

Hin Lap: Village west of Korat; E.

Hin Ngom: Tambon on the Mekong; E.
Hua Hin: Village and resort on Gulf of Siam; W.
Hua Vieng: Village in Nan Province; N.
Huey Lak: Mountain brook northwest of Chiengmai; N.
Huey Luk: Brook (2,000 feet) in Khun Tan Mountains; N.
Huey Me Lao: Mountain brook northwest of Chiengmai; N.
Huey Me Sae: Mountain brook northwest of Chiengmai; N.
Huey Salob: Brook northeast of Mehongsorn; N.
Huey Ya Pla: Near Bandon; P.
Huey Yang: Village and railway station south of Prachuab Kirikhan; P.
Huey Yang: Brook flowing into Klong Yai, near Sriracha; SE.
Hupbon (or **Hoopbon**): Village near Sriracha; SE.
Kampaengpet: Village on the Meping north of Paknampo; C.
Kampang: On the Nan River; N.
Kanburi (or **Kanchanaburi**): Town on the Meklong at junction of its two forks, Kwe Yai and Kwe Noi, C.
Kantang: Town south of Trang; P.
Kao Bantad: Mountain near Cambodia, east of Krat; SE.
Kao Chong: Mountain east of Trang; P.
Kao Kuap: Mountain near Cambodia, east of Krat; SE.
Kao Lem: Mountain (1,328 m) in Sankambeng Range; E.
Kao Luang: Mountain (1,756 m) west of Nakon Sritamarat; P.
Kao Luong: Extensive mountainous area near Burmese border west of Prachuab Kirikan; SW.
Kao Nong: Mountain (1,247 m) east of Bandon; P.
Kao Pae Pan Nam: Mountain west of Lomkao, Pasak River; C.
Kao Sabap (or **Sabab**): Isolated mountain near Chantabun; SE.
Kao Seming (or **Saming**): Low mountain in coastal plain near Krat; SE.
Kao Soi Dao: Mountain (993 m) in Nakon Sritamarat Range west of Singora and southeast of Trang; P.
Khlung: Village near Chantabun; SE.
Khonken: Village on the Menam Chi near Udon; E.
Khonka: Valley west of Mesarieng; N.
Khun Tan (or **Khun Tal**): Extensive mountainous area; N.
Kieu (or **Kiew**): Fishing village on west side of Gulf of Siam on Bandon Bight; P.
King Pai: Village north of Korat; E.
Kiu Pang: Village near the Salwin River; Burma.
Klong Ban Poh: Branch of the Menam Chao Phya; C.
Klong Chawang: Mountain stream east of Bandon; P.
Klong Kriangkrai: Small tributary of the Menam Chao Phya near Nakon Sawan; C.
Klong Nakon Noi: Stream flowing through Nakon Sritamarat into Gulf of Siam; P.
Klong Rangsit: A canal near Bangkok; C.
Klong Sao Tong: Same as Klong Ta Sai, q. v.; P.
Klong Sok: Branch of the Tapi River, Bandon Province; P.
Klong Tadi: Stream flowing from mountains eastward into Gulf of Siam through Nakon Sritamarat; P.
Klong Tai Sai: Village and stream near Ronpibun; P.
Klong Yai: Stream near Sriracha flowing into sea near Rayong; SE.
Klong Yai: Stream and village on Cambodian border opposite Koh Kut; SE.
Knong Phra: Pak Chong; E.
Koh Angtong: Island in Gulf of Siam near Koh Samui; P.
Koh Chan: Bird-nest island on west side of Gulf of Siam north of Chumporn; P.

Koh Chang: Large island in Gulf of Siam; SE.
Koh Chula: Islet in Gulf of Siam off Lem Sing; SE.
Koh Kahten: Small island in Gulf of Siam south of Koh Samui; P.
Koh Kram: Island on east side of Gulf of Siam; SE.
Koh Kut: Island in Gulf of Siam; SE.
Koh Lak (same as Prachuab Kirikhan): Village on west side of Gulf of Siam south of Hua Hin, at junction of W and P Siam.
Koh Lantar: Island in Bay of Bengal; P.
Koh Maprao: Islet in Gulf of Siam near Langsuen; P.
Koh Pangan (incorrectly called Koh Pennan): Island north of Koh Samui; P.
Koh Pipidon: Island in Bay of Bengal; P.
Koh Prab (or **Prap**): Islet in Bandon Bight; P.
Koh Proet (or **Prerd**): Island in Gulf of Siam near Koh Chang; SE.
Koh Samet: Island in Gulf of Siam; SE.
Koh Samit: Island in Gulf of Siam near Chumporn; P.
Koh Samui: Large island in Gulf of Siam east of Bandon; P.
Koh Sichang: Island near head of Gulf of Siam off Sriracha; SE.
Koh Si-Koh Ha (Four-Five Island): Limestone island in Tale Sap; P.
Koh Talu (incorrectly spelled Taluei on charts): Island in Gulf of Siam near Koh Samui; P.
Koh Tao: Island in Gulf of Siam off Chumporn; P.
Koh Yai: Island in the Menam Chao Phya north of Bangkok; C.
Konken: North of Korat; E.
Korat (called also Nakon Rajasima, Nakon Rachasima, etc.): Large town; E.
Krabin: Town on the Sakeo River, tributary of the Bangpakong River; C.
Krat (**Trad**): Town on the Krat River; SE.
Kumpawapi: Village near Udon; E.
Kuong Phra: Village between Pak Chong and Tha Chang; E.
Kut Bong: Tambon on the Mekong; E.
Kwe Noi: West branch of the Meklong; W.
Kwe Yai: East branch of the Meklong; C.
Kwe Yai: Branch of the Menam Nan near Paknampo; C.
Lam Klong Lang: Stream west of Pak Chong flowing into the Pasak River; E.
Lam Tong Lang (also written Lamton Lang): Village near Pak Jong; E.
Lampang: Large town on the Menam Wang, a tributary of the Meping, south of Chiengmai; N.
Langsuan: Fishing town on west side of Gulf of Siam south of Chumporn; P.
Lantae (or **Lante**): Village on the Menam Chao Phya; C.
Lat Bua Kao: Railway village on tributary of the Menam Mun near Pak Chong; E.
Lem Ngob: Village on mainland opposite Koh Chang; SE.
Lem Sing: Chantabun; E.
Lomkao: Village near headwaters of the Pasak River; C.
Lomsak: Village on the Pasak River; C.
Lopburi: Ancient town north of Ayuthia; C.
Mae Hong Sorn: NW.
Mehiek: Village on the Salwin River; Burma.
Mehongsorn: Large town on the Mepai; N.
Mekang: Waterfall stream on Doi Sutep; N.
Mekhan: Tributary of the Meping southwest of Chiengmai; N.
Meklong: A town at the mouth of the Meklong River, W.
Mekok: River at Chiengrai, tributary to the Mekong; N.
Mekong: Large river forming part of boundary between Siam and Laos; E and N.
Mekong: Siamese name for the Salwin River.

Mekong: Stream tributary to the Mepai, N.
Melak: Village northwest of Chiengmai; N.
Melang: Village (700 m) west of Pai; N.
Mepai: Large river tributary to the Salwin; N.
Mepeung: Mountain stream northwest of Chiengmai; N.
Meping: Principal river in northern Siam, joining the Menan at Paknampo to form the Menam Chao Phya.
Meru Sawan: See Doi Phra Chao.
Meserieng (called also Maing Longyi and Meyuam): Town on the Meyuam; N.
Mesort (written also Mesord and Mesawt): Village on the Thoungying River; N.
Mesuya: Valley northeast of Mehongsorn; N.
Meyom: River tributary to the Menan; N.
Meyuam: Large tributary of the Salwin and a town thereon also called Meserieng (q. v.); N.
Moulmein: City at mouth of the Salwin River; Burma.
Muang Krabin: (See Krabin.)
Muang Pai: (See Pai.)
Muek Lek: Village and railway station on tributary of the Pasak River; E.
Na Muang: Tambon near Rajaburi; C.
Nakon Chaisi (spelled also Nakawn Chaisi and Nagara Jaisa): town and district west of Bangkok; C.
Nakon Nayok: Town and river northeast of Bangkok, river tributary to the Bangpakong; C.
Nakon Panom: Town on the Mekong; E.
Nakon Patom: Town west of Bangkok, capital of Nakon Chaisi; C.
Nakon Sawan (written also Nagara Svarga):Town on the Menam Chao Phya at junction of the Meping and the Menan; practically the same as Paknampo; C.
Nakon Sritamarat: Large town; P.
Nam Cheo: Stream and village in Krat Province; SE.
Nam Chi Hua: Village on the Salwin River; Burma.
Nan: Town on the Menam Nan; N.
Nan River: N.
Nawong: Village near Patalung, Tale Sap; P.
Noan Wat: Village north of Korat; E.
Nong Bua (Lotus Lake): Village on the Pasak River; C.
Nong Han (or **Nong Lahan**): Large lake near Sakon Nakon draining into the Mekong; E.
Nong Han (or **Nong Lahan**): Large lake near Kumpawapi draining into the Menam Chi; E.
Nong Hang Sai: Large lake near Payao; N.
Nong Kae: Village on Klong Rangsit (see Rangsit); C.
Nong Kai: Town on the Mekong; E.
Nong Keng: Village on the Mekong; E.
Nong Khor: Lake and village near Sriracha; SE.
Nong Mong: Lake and village near Krabin; C.
Nong Nam Kiew: Lake and village inland from Sriracha; SE.
Nong Parai: Village on the Kwe Noi near Kanburi; W.
Nong Pranang: Swamp-lake off the Menam Nan near Bung Porapet; C.
Nong Preng: Lake and village east of Bangkok; C.
Nong Ru: Lake off the Nakon Nayok River; C.
Nong Yang: Lake and village east of Sriracha; SE.
Nontaburi: Village on the Menam Chao Phya north of Bangkok; C.
Pai (or **Muang Pai**): Large town on the Mepai; N.
Pak Bhayoon: Village on Tale Sap; P.

Pak Chong (or **Pak Jong**): Mountain village; E.

Pak Hai: Village on the Menam Chao Phya north of Bankgok; C.

Pakhinburi: Village on the Mekong; Laos.

Paknam Chao Phya: Fishing town at the mouth of the Menam Chao Phya; C.

Paknam Khan Nu: Village on the Meping near Paknampo; C.

Paknampo: Town at junction of the Meping and the Menan; C.

Pakpoon: Village on the west side of the Gulf of Siam in Nakon Sritamarat Province; P.

Pakret: Island in the Menam Chao Phya north of Bangkok; C.

Pang Chao: Village on the Mekang on Doi Angka; N.

Pang Meton: Village on Doi Nangka; N.

Pang Sok: Mountain village between Muek Lek and Pak Chong, E.

Papun (or **Papoon**): Town in Tenasserim Province; Burma.

Pasak River: A long river flowing south and dividing eastern from central Siam.

Patalung (called also Muang Lung and Siyek): Town near Tale Sap; P.

Patani: Large town on west side of Gulf of Siam near China Sea; P.

Payao: Lake and village between Lampang and Chiengrai; N.

Petchabun: Town on the Menam Sak; C.

Petchaburi: Town on Petchaburi River, south of Rajaburi; C.

Petriew (or **Petrieu**): Town on the Bangpakong (called also Chachongsao and Chaxoengsao); C.

Pichit: Town on the Menam Nan; C.

Pitsanulok (or **Bisnulok**): Town on the Menam Nan; C.

Pol: Village north of Korat; E.

Pon Pisai (called also Ban Chumporn): Village on the Mekong; E.

Pong (or **Pawng**): Village on Pong River, tributary of Menam Chi, near Udon; E.

Potaram: Village on the Meklong north of Rajaburi; C.

Prachin: Village on the Bangpakong northeast of Petriew; C.

Prachuab Kirikhan (called also **Koh Lak**): Town on west side of Gulf of Siam; W.

Prae: Village on the Nan River; N.

Pran: West side of Gulf of Siam, north of Koh Lak at the mouth of Pran River; W.

Puk Noi: Village on the Pasak River; C.

Puket: Large island and town on west coast of Peninsular Siam (formerly known as Junk Ceylan, etc.).

Raheng: Town on the Meping; C.

Rajaguri (spelled also Rachaburi, Rajburi, Rajpuri, Ratburi, etc.): Large town on the Meklong; C.

Rangeng: Village near Korat; E.

Rangsit: Extensive irrigated district north of Bangkok; C.

Rayasothon: Village near Udon; E.

Rayong: Fishing village on Gulf of Siam; SE.

Roi Et (or **Roi Ech**): Town northeast of Korat; E.

Ronpibun: Village near Tung Song; P.

Sai Yok: Village on the West branch (Kew Noi) of the Meklong; W.

Sakeo (or **Srakeo**): Village near Krabin; C.

Sakon Nakon: Town west of Nakon Panom; E.

Salwin: One of the large rivers of Asia, forming part of the western boundary of Siam.

Sam Roi Yot: Isolated mountainous limestone region south of Pran River; P.

Samrong: Canal south of Bangkok connecting Menam Chao Phya and the Bangpakong; C.

Sankambeng Range: Mountains dividing East and Southeast Siam.

Sanpayang (or **Sanpaiang**): Village (384 m) northwest of Chiengmai; N.
Saraburi: Town on the Menam Sak; C.
Satahip (or **Sataheep**): Village and naval station on east side of Gulf of Siam south of Sriracha; SE.
Sichol (or **Sichal** or **Seechol**): Mining camp southeast of Bandon; P.
Sikeu: Village on branch of the Menam Mun; E.
Sikuk: Tributary of the Menam Chao Phya; C.
Singora (called also Songkla or Songkhla): Town on Gulf of Siam and Tale Sap; P.
Sisiket (or **Srisiket**): Town east of Korat; E.
Sobpung: Village (875 m) northwest of Chiengmai; N.
Song Kwe: Valley west of Meserieng; N.
Sriracha (or **Srimaharaja**): Village on Gulf of Siam; SE.
Supanburi: Town on the Supan River; C.
Tachalom: Town on the Tachin River; C.
Tachang Lei: Village on the Salwin River; Burma.
Tachin: Town on the Tachin River (called also Samut Sakon, Samud Sakawn, etc.); C.
Tadi: Stream flowing into Gulf of Siam through Nakon Sritamarat; P.
Tako (or **Tago**): Fishing village on the Gulf of Siam near Chumporn; P.
Tale Noi: Lake connected with the inner part of the Tale Sap; P.
Tale Sap (Inland Sea): Large body of fresh and brackish water near Singora; P.
Tapi: River discharging into Bandon Bight below Bandon; P.
Ta Pra: Tambon north of Korat; E.
Ta Ta-Fang (also written Ta Fang): Frontier police station on Salwin River west of Mesarieng; N.
Takaw: Village on the Pasak River; C.
Tha Chang (Elephant Crossing): Village on the Menam Mun east of Korat; E.
Tha Chang: Village on tributary of the Menam Mun west of Korat; E.
Tha Lo: Village southwest of Bandon; P.
Tha Luang: Village on the Pasak River, site of extensive irrigation works; C.
Tonburi (or **Thonburi**): Part of Bangkok on west bank of the Menam Chao Phya; C.
Trad: (See Krat.)
Trang: Town west of Patalung; P.
Ubon (or **Ubol**): Town on Menam Mun at eastern terminus of Eastern Railway; E.
Udon (or **Udawn**): Town north of Korat; E.
Um Mong: Valley (600 m) west of Pai; N.
Vichienburi: Village on the Pasak River; C.
Vientiane (or **Wiengchan**): Capital of French Laos.
Wang Hin: Village east of Bandon; P.
Wang Kien: Village on Kew Yai of the Meklong near Kanburi; C.
Wat Kiriwong: Wat and community of Klong Tadi west of Nakon Sritamarat; P.
Waterfall is on Kao Chong, Trang; P.
Yala: Village in Patani Province; P.
Yamoo: Village near Patani; P.

DR. W. L. ABBOTT'S ITINERARY IN SIAM

Dr. W. L. Abbott arrived at Prahmon, Trang, on February 18, 1896, and collected there until April, except for a visit to Telibon Island, February 25 to March 1, and again on March 28. He then went up the Trang River about 20 miles to Tyching, which is on the right bank of the river where the road crosses leading to Patalung, remaining there until August 8 and then moving to Lay Song Hong, a large lake or swamp near the head of the river, where he stayed until about the middle of January 1897. Then he dropped down the river to Kantány and remained there January 16 to 18, then went east to Chong, on the divide between Trang and Patalung, and on February 22 camped at the base of Kao Nom Plu, a mountain 3,000 feet high, where he remained two weeks.

On March 12 he reached the base of Kao Song and on the same day was prostrated by remittent fevers for nine days. Then he returned to Tyching and two days later dropped down the river to Gántong and later went to Bhagalterum, a village near the mouth of the Trang River and north of the Plian River, which empties into the Trang near its mouth, and remained there March 20 to 23, and then went to Plian, a town on the south bank of the Plian River, where he remained in the vicinity from April 2 to 10. He then went to a hospital at Penang. The results of this expedition were 1,027 bird skins, besides large collections in other fields.

Dr. Abbott returned to Trang in December 1898. He left Plian on December 26 and, going inland, reached Kok Sai (at the foot of Kao Nok Ram at the head of the Plian River) on the 27th and remained in camp there, on the edge of heavy forest, until January 8, 1899. After making some visits to the slopes of the mountain, he moved camp up the slopes of Kao Nok Ram to 1,700 feet, with heavy forests in all directions, remaining there until the 18th. The mountain was ascended to the summit, 3,200 feet; some peaks not visited were 500 to 600 feet higher. He then returned to Kok Sai, leaving there on February 1 to visit Kao Soi Dao, a mountain south of Kao Nok Ram and not quite so high. He camped on the slopes at 1,100 feet and remained there until February 21. Returning to Kok Sai on the 22d, he stayed until the 25th and then went to Naklua, a village on the Trang River near its mouth, about 5 miles east of Prahmon, where he remained from March 2 to 5, 1899. Then he left for Singapore.

On this trip he brought back 300 bird skins in addition to his usual miscellaneous collections.

While outfitting at Singapore for a cruise in a schooner he was having built, Dr. Abbott collected 80 bird skins at Selitar, 9 miles from Singapore, in May 1899. At that time there were still a little jungle and forest on Singapore Island. He found the parrot *Psittacula longicauda* quite common, but shot only one. Wild pigs and small deer were rather common; rusa and an occasional tiger still occurred.

He then cruised in his schooner through the Rhio Archipelago and eastward to the Tambelan and Anamba Islands from July to September, and on his way back touched at Pulo Tioman on the last day of September and remained for the first four days in October. C. Boden Kloss accompanied him on the cruise.

Dr. Abbott set sail from Singapore early in November 1899 for the Mergui Archipelago and on his way stopped at Pulo Lada, near Langkawi, November 30; then he went to Pulo Langkawi and was there from December 1 to 9, then landed on Pulo Nipis on December 13, and arrived at Pulo Adang on December 14 and remained until the 17th. He reached Chance Island, the southern island of the Mergui Archipelago, on December 27 and remained until the 31st, then touched at Victoria Point, Tenasserim, on January 3, 1900, and went on to Tanjong Badak the same day and remained there until the 12th, but on the 5th was at Victoria Island; these three localities are not far apart. The following islands of the Mergui Archipelago were then visited: St. Mathews, January 14–17; St. Lukes, January 19–21; Loughborough, January 23–26; South Twin, January 27; and Sullivans, January 29–February 5. Next came Bok Pyin, on the mainland, February 9–19; then Domel Island, February 22–27; Ross Island, March 5; Helfer Island, March 5–6; Bentinck Island, March 8–12; Bok Pyin and Tanjong Badak, March 15; Victoria Point, March 16; Maliwun, Tenasserim, March 18–25; and Victoria Point again, March 30–31. He then sailed for Singapore, stopping at The Dindings from April 12 to 16, 1900. On this cruise 436 bird skins were collected.

In September and October 1900, Dr. Abbott cruised along the coast of Trengganu and visited Pulo Tioman again. The latter has a peak 3,500 feet high, but it was not climbed. C. Boden Kloss accompanied him on the trip; 120 bird skins were secured in Trengganu and 39 on Pulo Tioman.

On the way to explore the Nicobar and Andaman Islands, Dr. Abbott touched at Victoria Point, Tenasserim, on November 24 and December 5–16, 1900; Tanjong Badak, November 26; Sungei Balik, November 29 and December 3; St. Mathews Island, December 9; Hastings Island, December 12; Chaduquat Point, December 19; and High Island, December 30, 1900. Not many bird skins, however, were secured at these localities.

From May to August 1901 Dr. Abbott was exploring the coast of Johore and also took a few birds on the Pahang side of the Endau River, but not many birds were obtained.

In the summer of 1902, Dr. Abbott visited the Rumpin River, Pahang, and Pulo Bintang, Rhio Archipelago, and obtained 88 bird skins, mostly in Pahang.

In the fall of 1903, Dr. Abbott started on another cruise to Tenasserim and the Mergui Archipelago on which he collected 119 bird skins. He touched Pulo Langkawi, November 5; was off Pulo

Terutau, November 8–21; reached Victoria Island, Tenasserim, December 4–5; was off Tanjong Badak, on the mainland, December 9–10, and Champang, December 13–22. Then the following islands were visited: St. Matthew, December 24; Sir William James, December 29–30; Sullivans, January 4–6, 1904; Domel, January 22–30; Kisseraing, February 2–5. He then stopped at Boyces Point on the mainland, February 9–12; Telok Krang, February 14–17; 6 miles south of Boyces Point, February 17; Red Point, February 18–23; Sungei Balik, February 25–26; Telok Besar, February 27 to March 6; Maliwun, March 7–9; Victoria Point, March 12; Telok Besar, March 18–21; Victoria Point, March 29; and again at Pulo Terutau, April 6, 1904, on his way to Singapore.

I have thought it well to include all the birds collected by Dr. Abbott on the various expeditions mentioned above, except those from Pulo Tioman, the Rhio Archipelago, the Tambelans, and Anambas; the latter two have been worked up by Dr. Harry C. Oberholser,[2] and the others are beyond the scope of this paper.

Tenasserim, the Mergui Archipelago, and the Malay States are also outside the limits of the present paper, but it is thought well to record the specimens from these localities, as they add few birds unrecorded from Siam and help to show the distribution of the forms to better advantage.

Dr. Abbott was probably the first naturalist to make collections in the interior of Trang, and quite a number of his birds were unrecorded from Siam at the time they were taken, but as the interior of Peninsular Siam has been visited several times since by other parties, most of his records have been duplicated. He, however, took the following birds that still remain otherwise unrecorded from Siam:

Nannocnus eurythmus.
Sterna albifrons saundersi.
Cuculus micropterus concretus.
Hirundapus giganteus giganteus.
Hydrocissa malayana.
Cranobrontes corrugatus.
Cyanops henrici henrici.

The following forms of birds have been described from Dr. Abbott's Malay Peninsula collections:

(1) By DR. CHARLES W. RICHMOND

Turdinulus granti.
Stachyris chrysops.
Criniger sordidus.
Oreocincla horsfieldi affinis.
Aethopyga anomala.

(2) By DR. HARRY C. OBERHOLSER

Butorides javanicus abbotti.
Dendrophassa vernans abbotti.
Phodilus badius abbotti.
Caprimulgus macrurus anamesus.
Copsychus saularis haliblectus.
Kittacincla malabarica pellogyna.
Kittacincla malabarica lamprogyna.
Cyornis rubeculoides chersonesites.

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[2] Proc. U. S. Nat. Mus., vol. 55, pp. 129–143, 1919; U. S. Nat. Mus. Bull. 98, 75 pp., 1917.

Collocalia linchi clachyptera.
Ramphalcyon capensis hydrophila.
Graucalus sumatrensis messeris.
Dissemurus paradiseus messatius.
Dissemurus paradiseus hypoballus.
Dissemurus paradiseus mallomicrus.
Anuropsis malaccensis driophila.
Stachyris nigriceps dipora.
Mixornis gularis chersonesophila.
Mixornis gularis archipelagica.
Hypothymis azurea forrestia.
Culicicapa ceylonensis antioxantha.
Lamprocorax panayensis halictypus.
Aethopyga siparaja heliotis.
Cinnyris ornata heliobleta.
Arachnothera chrysogenys astilpna.
Arachnothera longirostris antelia.
Arachnothera longirostris heliocrita.
Uroloncha acuticauda lepidota.

(3) By J. H. RILEY

Cyanops franklini trangensis.

A number of the foregoing forms are not now recognized, but as they will be dealt with in the text, it is not necessary to go into the question of their validity here.

ZOOGEOGRAPHY OF THE REGION

The geography of the Malay Peninsula has been given in some detail by H. C. Robinson [3] to whose account the reader is referred.

Siam, lying between Burma on the west and north and Indochina on the east, has no distinctive avifauna. The Peninsular part, being between Peninsular Burma on the north and the Malay States on the south, is intermediate in location, but predominantly Malayan in its fauna.

Kloss [4] has proposed to divide the country into six zoogeographical divisions for convenience, as follows:

(1) Northern Siam. The Laos country, mostly mountainous or submontane, north of latitude 18° N., between the mouth of the Me Mue or Thoungyin River, an affluent of the Salwin, and the great eastern bend of the Mekong.

The avifauna is characterized principally by the extension southward of many Burmese species.

(2) Central Siam. The great watered plain of the Menam Chao Phya and its tributaries, south of upper Siam, including the lowlands of the basin of the Bangpakong River in the southeast and the lower reaches of the Me Klawng and Petchaburi Rivers in the southwest.

No distinctive birds occur in the division.

(3) Western Siam. The hill country between the Tenasserim frontier and the Menam lowland plain from the Me Mue River mouth south to Koh Lak. This region was divided later into western and southwestern Siam.

(4) Peninsular Siam. From the Isthmus of Kra south to the Malay States.

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[3] The birds of the Malay Peninsula, vol. 1, pp. xiii–xxix, 1927.

[4] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 250–251, and map, 1915.

Characterized by the extension northward of many Malayan forms.

(5) EASTERN SIAM. The Korat Plateau, bounded on the north and east by the Mekong, on the south by the Cambodian frontier, and on the west roughly by the Pasak River.

Otocompsa johnsoni is confined to this region.

(6) SOUTHEASTERN SIAM. The varied country along the Gulf, bounded on the east by the Cambodian frontier, on the north by eastern Siam (about latitude 14° N.), then west to the Pasak River, and south to the Gulf.

Most of the forms discovered by Dr. Smith come from this region, and many Cambodian forms enter the country here. The avifauna is strongly Cambodian.

PREVIOUS ORNITHOLOGICAL WORK

The first list of Siamese birds that I have seen is one by John Gould[5] of a small collection made by Sir Robert H. Schomburgk. This was only a nominal list of 64 species, but it contained one or more species that have not been taken in Siam since. One is named for the first time, but, as it is not so indicated and there is no description, it has no taxonomic standing. Five years later Sir Robert H. Schomburgk[6] gave some notes on the habits of some of the birds he had sent to Gould and recorded a few additional species.

Allan O. Hume in 1877 sent his collectors, W. Davison and J. Darling, to work the Malay Peninsula, which they covered pretty thoroughly on the west side from the northern boundary south to Selangor. Owing to conditions at that early period, they were not able to penetrate far from the coast. Hume published the results of their labors,[7] while their specimens went later to the British Museum. August Müller[8] wrote a dissertation upon a collection of birds from the Island of Salanga, or Puket, on the west coast of Peninsular Siam, which he assigned to 155 species. There seems to have been little ornithological activity after this until Dr. W. L. Abbott began his work in eastern Asia in Trang in 1896, of which a full list of the birds will be given herein.

In 1899–1900 the Skeat Expedition visited the eastern coast of the Malay Peninsula, and Bonhote[9] published a list of the birds collected. Then Nelson Annandale and Herbert C. Robinson made an expedition to the Patani States and Perak, and the birds collected were worked up at the British Museum by Ogilvie-Grant.[10]

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[5] Proc. Zool. Soc. London, 1859, p. 151.

[6] Ibis, 1864, pp. 246–268.

[7] Stray Feathers, 1879, pp. 37–72, 151–163; 1880, pp. 107–132.

[8] Die Ornis der Insel Salanga, sowie Beiträge zur Ornithologie der Halbinsel Malakka, 96 pp., 2 folding tables, 1882; republished in Journ. für Orn., 1882, pp. 353–448.

[9] Proc. Zool. Soc. London, 1901, vol. 1, pp. 57-81.

[10] Fasciculi Malayenses, pt. 3, pp. 65–123, 1905.

Eight or more years after Dr. Abbott's visits to Trang, parties from the Museum of the Federated Malay States visited the region and the Islands of Langkawi and Terutau, and the collections were worked up by Robinson and Kloss.[11] This was the beginning of a long period of activity by one or the other of these men, who worked together in exploring Peninsular, eastern, and southeastern Siam. They have embodied the results of their labors in Peninsular and southwestern Siam in a joint paper.[12]

In the meanwhile, the Natural History Society of Siam had been formed at Bangkok in 1913, and it began the publication of its Journal the following year. This society was composed of a number of enthusiastic members who soon began to publish articles on birds in the Journal.

Count Nils Gyldenstolpe had visited eastern and northern Siam in 1911 and published the first extensive paper on the birds of this region[13]; later he paid a second visit to the country, when besides collecting in northern Siam he spent some time at Koh Lak[14]; later he compiled a complete list of the birds of Siam known at that time.[15]

R. M. de Schauensee has made three journeys to Siam and published the results of his trips.[16] His collections were presented to the Academy of Natural Sciences of Philadelphia.

H. G. Deignan [17] has compiled a list of the birds personally taken or reported by others from the Chiengmai region, recording 337 forms; this has had additions made to it by the collections of C. J. Aagaard [18] and by de Schauensee on his third expedition cited above. Later Mr. Deignan [19] returned to Chiengmai and published a revised list, bringing the number of birds recorded from there to 410.

Herbert C. Robinson projected a work upon the birds of the Malay Peninsula to be completed in five volumes, but unfortunately he died after only two of the volumes had been completed,[20] but the remaining volumes are being written by F. N. Chasen.

E. C. Stuart Baker's volumes on the birds of British India [21] contain descriptions of the majority of the northern Siamese forms.

For a long while the avifauna of French Indo-China was little known, but this defect has been largely remedied by the explorations of Jean Delacour, Pierre Jabouille, and others in recent years and by the publication by the two men mentioned of a 4-volume work on the birds of the country,[22] with numerous colored plates. Many forms of eastern Siam extend into Cambodia and western Laos, probably many more than are known to do so at present.

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[11] Ibis, 1910, pp. 659-675. pl. 10, map; 1911, pp. 10-80, pl. 1.

[12] Journ. Nat. Hist. Soc. Siam, vol. 5, pp. 1-397, 1921-1924.

[13] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, pp. 3-76, 1 col. pl., 1913.

[14] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, pp. 1-160. 1916.

[15] Ibis, 1920, pp. 446-496, 569-607, 735-780.

[16] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, pp. 553, 580, 1928; vol. 81, pp. 523-588, 1930; vol. 86, pp. 165-280, 1934.

[17] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, pp. 131-176, 1931.

[18] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, pp. 232-248, 1932.

[19] Ibid., vol. 10, pp. 71-129, 1936.

[20] The birds of the Malay Peninsula, vol. 1, 7+329 pp., 1927; vol. 2, xxii+310 pp., 1928.

[21] The fauna of British India, ed. 2, Birds. 7 vols., 1922-1930.

Since the present paper was first written, F. N. Chasen[23] has published a "Handlist of Malaysian Birds," a systematic account of the birds of the Malay Peninsula from the Isthmus of Kra to and including the Malay States, Sumatra, Borneo, Java, and the adjacent small islands.

In the present treatment I have tried to avoid controversial questions and to condense the technical remarks as much as possible. I have listed all the birds collected by Drs. Smith and Abbott and have given the data on eggs, but a thorough list of all the birds of Siam can not be given until all the data upon their occurrence in the country is upon record, which will not be for many years to come. The nomenclature is in need of review, but this is a matter that needs time and research and usually goes through a period of evolution and so has not been attempted. Another subject that needs attention in the country is that of migration. Since many lists, even some quite modern, fail to give dates of occurrence, it is often difficult with the data at hand to judge whether a bird is a migrant, a winter resident, or a resident.

The breeding habits and life histories of the resident birds also need to be studied. E. G. Herbert[24] has made an excellent beginning, treating 108 forms, but more work along these lines is much to be desired. Observations should be made by a trained observer, who is thoroughly familiar with the bird observed, or who should collect a specimen for future identification by a competent specialist.

Of the rarer birds of Siam, I have given all the references of occurrence in the country known to me, but of the commoner forms, of which Drs. Smith or Abbott took adequate series, the references have been selected to furnish additional data.

Undoubtedly many birds remain to be added to the avifauna of Siam. The present paper has been written from the distributional standpoint, to furnish data for a more thorough work by some future author. In the catalog to follow, Dr. Smith's birds are listed first, then those of Dr. Abbott.

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[22] Oiseaux l'Indochine Française, 1931.

[23] Bull. Raffles Mus. 11, xx+389 pp., 1935.

[24] Journ. Nat. Hist. Soc. Siam, vol. 6, pp. 81-123, 215-222, 1923; pp. 293-311, 1924; and Journ. Siam Soc. Nat. Hist. Suppl., 1926, pp. 323-326.

SYSTEMATIC LIST OF BIRDS

Family COLYMBIDAE: Grebes

POLIOCEPHALUS RUFICOLLIS ALBIPENNIS (Sharpe)

Tachybaptes albipennis Sharpe, Bull. Brit. Orn. Club, vol. 4, p. 4, 1894 (Indian Peninsula).

Four males, four females, and one unsexed, Potaram, February 5–6, 1926, January 23, 1927; one male and one female, Bangkok, May 22, 1926; five males and two females, Bung Borapet, June 23, 1932, March 26–28, 1933; one male, Petrieu, January 20, 1924.

Dr. W. L. Abbott took one male, Tyching, Trang, July 6, 1896. He describes the soft parts as: Iris, straw-yellow; feet, black in front, olive behind; bill, black above, mottled with white beneath, naked skin at base pale green.

None of the specimens taken by Dr. Smith is in adult plumage, but the single male taken by Dr. Abbott is approximately so. This I have carefully compared with a male and a female from British East Africa and a male from Madagascar in breeding plumage. The Trang male has less white at the base of the secondaries, and the outer web of these feathers is black and the latter color even extends for a short distance from the shaft toward the tip on the inner web. In the African race the secondaries are largely white at the base, and the black on the outer web is confined to a narrow border near the tip. This difference seems to hold also in the specimens in nonbreeding plumage. It seems to me incredible that the form occurring in Africa would be the same as that occurring in India and Siam, and as the latter seems to show a fundamental difference it should be recognized.

The range of *albipennis* would then be Ceylon, India, and Burma, east to Siam and probably Cochinchina.

Poliocephalus ruficollis poggei of China has more black on the cheeks in the breeding season than *albipennis*, but in the nonbreeding plumage the two forms are much alike, and it would be rather difficult to separate them in this stage.

P. r. albipennis is more or less a common resident all over Siam in suitable situations; in Peninsular Siam it extends at least to Trang and probably farther. Herbert [25] reports it not uncommon in central Siam. He received two sets of five eggs each, one from Ayuthia, June 25, and one from Tachin, October 22.

Family PELECANIDAE: Pelicans

PELECANUS ROSEUS Gmelin

Pelecanus roseus Gmelin, Systema naturae, vol. 1, pt. 2, p. 570, 1789 (Manila, Philippines).

Pelecanus philippensis Gmelin, *ibid.*, p. 571 (Philippines).[26]

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[25] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 355, 1926.

[26] Grant and Mackworth-Praed, Bull. Brit. Orn. Club, vol. 55, p. 63, 1934, state that this name is a synonym.

One female, Nakon Sritamarat, August 30, 1924.

Dr. W. L. Abbott writes that a large white pelican was observed several times at Lay Song Hong, Trang, but no specimens were obtained. It was probably this species.

Gyldenstolpe [27] records one pair from Tha Law but observed great flocks on the coast of the Gulf of Siam at the end of April and beginning of May; later,[28] August 16, 1914, he took a male and a female at Chieng Hai, northern Siam, and states that during the rainy season they assemble in great numbers on the large swamps of central Siam. In Peninsular Siam there seem to be few records, but this is probably due to the lack of scientific collecting rather than to the scarcity of the bird in suitable localities. There are a number of specimens from the Malay States in the British Museum. Robinson [29] states that pelicans are now rare in the Malay States but are still common in the Trang swamps, the Talé Sap in Singgora, and Talé Noi in Patelung. They used to be common in Patani Bay, and they are fairly numerous in Bandon.

Delacour and Jabouille [30] report this pelican very common in suitable districts in Cochinchina and Cambodia, where it breeds in great numbers and forms an object of commerce; in Annam it is rare.

It should and probably does occur in southeastern Siam.

The range of the species extends from southern China to Burma, India, Cochinchina, Siam, and southward through Peninsular Siam to Java and the Philippines.

Family SULIDAE: Boobies, Gannets

SULA LEUCOGASTER PLOTUS (Forster)

Pelecanus plotus FORSTER, Descriptiones animalium . . ., Lichtenstein ed., p. 278, 1844 (near New Caledonia).

Dr. W. L. Abbott collected an immature female of this form near the Aroa Islands, Straits of Malacca, November 14, 1899; and an immature female near Pulo Perak, Straits of Malacca, October 31, 1901.

Robinson and Kloss [31] record this booby, under the name *Sula sula*, as numerous off Langkawi in November 1907; Williamson [32] picked up a dead specimen on July 18, 1916, on an islet near Koh Rin, Inner Gulf of Siam, and later found it on an islet near Koh Chuan, Inner Gulf of Siam, in May 1918.[33] Robinson and Kloss,[34] writing of Peninsular Siam, state that it is common on the west coast of Siam, but they had not seen it on the east coast, though they were assured it breeds on a small island off the coast of Nakon Sritamarat.

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[27] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 71, 1913.

[28] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 132, 1916.

[29] The birds of the Malay Peninsula, vol. 1, p. 56, 1927.

[30] Oiseaux l'Indochine Française, vol. 1, p. 49, 1931.

[31] Ibis, 1911, p. 19.

[32] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 63, 1916.

[33] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 38, 1918.

[34] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 85, 1921.

The race occurs from northern Australia northward to Java, the Malay Peninsula, Siam, Indo-China, and the Chinese Coast (winter); eastward it occurs as far as Laysan.

Family PHALACROCORACIDAE: Cormorants

PHALACROCORAX CARBO SINENSIS (Shaw and Nodder)

Pelecanus sinensis SHAW and NODDER, Nat. Misc., vol. 13, 529, 1802 (China).

One immature male, Sriracha, September 20, 1925.

Dr. W. L. Abbott collected an adult male and an adult female at Lay Song Hong, Trang, August 22 and 29, 1896.

Dr. Abbott gives the colors of the soft parts as: Iris, emerald green; bill, black above and whitish or fleshy beneath; naked skin at base of bill and gular pouch, greenish black, thickly mottled with orange (male), deep yellow (female); naked skin beneath eye, orange; feet and claws, black. Weight of female, 4½ pounds.

Gyldenstolpe [35] reports this cormorant common near the rivers and swamps of central Siam and in the small lakes around Tha Law; Robinson [36] secured a male on Koh Pennan and states that he had obtained specimens on the coast of Patani and saw four birds in Senggora Roads on his way to Koh Samui; Gairdner [37] records it for the Ratburi and Petchaburi Districts.

The form ranges from southern Europe to China, south to India, Indo-China, Siam, and south in Peninsular Siam to the Malay States, where it is rare, however.

This is the largest of the three cormorants credited to Siam.

PHALACROCORAX NIGER (Vieillot)

Hydrocorax niger VIEILLOT, Nouv. Dict. d'Hist. Nat., vol. 8, p. 88, 1817 (East Indies, error; Bengal).

One male and five females, Bangkok, April 11, 1924, May 22 and 24, 1926, October 10, 1923, and October 19, 1924; two females, Nong Preng, January 29, 1927; one male and two females, Bung Borapet, June 22–27, 1932, and March 22, 1933.

Only two in the above series are adult and have begun to assume the breeding plumage. They are both females and were taken at Bangkok, October 10 and 19; the latter has a few white feathers on top of head and sides of neck; in the former a few white filoplumes appear on the pileum and around the eyes. The October 19 female has the bill very dark, except at the tip of the lower mandible, while in the October 10 female the bill is light colored, except along the culmen. These two specimens point to an early winter breeding season.

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[35] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 71, 1913.

[36] Journ. Federated Malay States Mus., vol. 5, p. 143, 1915.

[37] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 15, 31, 152, 1914.

This is a fresh-water cormorant and does not usually occur along the coast.

Gyldenstolpe [38] reports it common throughout southwestern and central Siam but apparently less abundant in the north; Robinson and Kloss [39] say that they saw it in a mountain stream in Bandon; Chasen and Kloss [40] state that it is unknown from the southern part of the Malay Peninsula.

The species ranges from Ceylon to India, Burma, Siam, Indo-China, the Malay Peninsula, Borneo, and Java.

Family ANHINGIDAE: Snakebirds

ANHINGA MELANOGASTER Pennant

Anhinga melanogaster PENNANT, Indian zoology, p. 13, pl. 12, 1769 (Ceylon and Java).

Two males and one female, Bung Borapet, June 20, 1932, March 28, 1933; one female, Nakon Sritamarat, March 10, 1929.

Dr. W. L. Abbott collected a female at Maliwun, Tenasserim, March 19, 1900.

Robinson and Kloss [41] saw a darter on the fresh-water lake in the Langkawi Islands, later given as Pulo Dayang Bunting [42]; they state that it is rare in the Malay Peninsula; Gyldenstolpe [43] reports the snakebird rather common in suitable localities throughout the whole country.

The species ranges from Mesopotamia to India, Burma, Siam, and Indo-China, south to Java, Borneo, the Philippines, and Celebes.

Family ARDEIDAE: Herons, Bitterns

ARDEA CINEREA RECTIROSTRIS Gould

Ardea rectirostris GOULD, Proc. Zool. Soc London, 1843, p. 22 (New South Wales; error; South India [44]).

One female, Bangkok, August 2, 1924.

This specimen, while of full adult size, has not fully assumed adult plumage.

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[38] Ibis, 1920, p. 775.

[39] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 86, 1921.

[40] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 161, 1928.

[41] Ibis, 1911, p. 19.

[42] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 85, 1921.

[43] Ibis, 1920, 775.

[44] Type in the Academy of Natural Sciences of Philadelphia from South India. Stone, Austral Avian Rec., vol. 1, p. 142, 1913.

Gyldenstolpe [45] gives it as a winter visitor to Siam, where it seems to be fairly common in the southern and central parts; Deignan [46] states that it occurs in small numbers at Chiengmai from October to May; Robinson and Kloss,[47] writing of Southwest and Peninsular Siam, say that it is "probably fairly common in winter."

The form breeds in eastern Siberia, northern China, and Japan, south to India and Burma, and migrates southward to winter in Indo-China, Siam, Java, and the Philippines.

ARDEA SUMATRANA SUMATRANA Raffles

Ardea sumatrana Raffles, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 325, 1822 (Sumatra).

Dr. W. L. Abbott took an adult male and an adult female at Prahmon, Trang, March 19, 1896; one adult male, Tanjong Sikakap, east coast of Johore, August 5, 1901; one adult male and two adult females, Mergui Archipelago (Loughborough Island, January 25, 1900; Helfer Island, March 5, 1900; and Bentinck Island, March 12, 1900).

Dr. Abbott notes the soft parts as follows: Iris yellow; bill black; pinkish white beneath; naked orbital skin bluish gray (one male) or dusty green (one female); naked skin at base of lower mandible yellowish. Weight of one male from Trang, 5½ pounds; one female from Bentinck Island, 5 pounds.

Robinson and Kloss [48] record a male from Pulo Terutau; Robinson [49] gives it for Koh Mehsi, West Island, and for Koh Pennan [50]; Robinson and Kloss,[51] writing of Southwest and Peninsular Siam, state that it is common in most places along the coast on mud flats and in mangrove swamps but very wary and hard to approach.

The form ranges from Burma through the Malay Peninsula to the Sunda Islands, Moluccas, and New Guinea. In northern Australia a related form occurs.

PYRRHERODIA PURPUREA MANILENSIS (Meyen)

Ardea purpurea var. *manilensis* Meyen, Nova Acta Acad. Caes. Leopoldino-Carolinae Nat. Curios., vol. 16, suppl., p. 102, 1834 (Manila, Philippines).

One male, Bung Borapet, June 23, 1932.

Gyldenstolpe [52] reports this bird fairly common in the swamps of northern Siam; Deignan [53] records it in small numbers about Chiengmai after the rains; Chasen and Kloss[54] record a female from the Raheng District; Gairdner[55] records it for the Petchaburi District; Robinson and Kloss,[56] after recording a male from Pakchan, say that in the south of the Peninsula it is extremely uncommon; Bonhote[57] records it for Patalung.

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[45] Ibis, 1920, p. 767.

[46] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 173, 1931.

[47] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 78, 1921.

[48] Ibis, 1911, p. 14.

[49] Ibis, 1915, p. 726.

[50] Journ. Federated Malay States Mus., vol. 5, p. 143, 1915.

[51] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 78, 1921.

[52] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 136, 1916.

[53] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 173, 1931.

It probably occurs all over Siam in suitable localities.

The form breeds from India, Ceylon, Burma, and China south of the Yangtze to the Riu Kiu Islands, south to Siam, Indo-China, the Philippines, and the Greater Sunda Islands to Celebes.

BUTORIDES JAVANICUS ACTOPHILUS Oberholser

Butorides javanicus actophilus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 1, 1912 (North Pagi Island).

Butorides javanicus icastopterus Oberholser, *ibid.*, p. 1 (Simalur Island).

Butorides striatus connectens Stresemann, Orn. Monatsb., vol. 38, p. 48, 1930 (Yaoshan, Kwangsi, China).

Butorides javanicus abbotti Oberholser, U. S. Nat. Mus. Bull. 159, p. 14, 1932 (Pulo Langkawi, western Malay Peninsula).

One male and one female, Nakon Sritamarat, October 7, 1896, and March 21, 1924; one male, Lem Sing, Chantabun, June 11, 1926; one immature male, Koh Chang, January 5, 1926.

Dr. W. L. Abbott took an adult and an immature female, Prahmon, Trang, March 7 and 19, 1896; one male, Singapore, May 22, 1899; one male, Domel Island, Mergui Archipelago, February 22, 1900; and a male, Pulo Langkawi, December 4, 1899 (the type of *Butorides javanicus abbotti*).

There is an adult male in the United States National Museum taken at Saan Taw, Raheng District, western Siam, April 5.

The Siamese specimens seem to agree with those from South China in size and color. Oberholser in naming *B. j. abbotti* included South China within the range of his new race, overlooking the fact that it had been previously provided with a name by Stresemann. Oberholser gives the range as follows: "India and the Malay Peninsula, north to southern China, Nepal, Kashmir; west to Sind and the Laccadine Islands; south to Ceylon, Sumatra, and Nias; and east to the Natuna Islands and Cochin China."

After reexamining the types of *actophilus* and *icastopterus*, I am convinced that they are only winter migrants from farther north and differ in no way from specimens from southern China.

The male from Lem Sing, Chantabun, is small and dark like Javan specimens, and the female from Prahmon, Trang, is also small but not so dark. These two I am regarding as small specimens of the form, as the male from Singapore, taken May 22, is large like the rest of the series but is somewhat immature. It may have been a wanderer after the breeding season, as immature herons are known to wander thus. If so, it must have been hatched the previous summer as it has almost acquired adult plumage. The resident form of the Malay Peninsula and southern Siam may be *Butorides javanicus javanicus*, but from the evidence at hand this is not substantiated.

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[54] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 160, 1928.

[55] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 152, 1915.

[56] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 78, 1921.

[57] Proc. Zool. Soc. London, 1901, vol. 1, p. 80.

Table 1 gives the measurements of the various series.

TABLE 1.—*Measurements of* Butorides javanicus actophilus

Specimens	Wing	Culmen
	Mm	*Mm*
4 males from South China	183–198 (188.5)	61–67.5 (64.9)
4 males from western Siam, Mergui Archipelago, and Malay Peninsula	176–180 (178.3)	60.5–66.5 (62.2)
5 males from Celebes	180–176 (173.9)	57–63 (59.6)
8 males from the Philippines	164–174 (165.6)	60–63 (61.9)
2 males from Simalur Island (one the type of *icastopterus*)	193–180	67–65
1 female from Trang	171	58
2 females from North Pagi Island (one the type of *actophilus*)	190–195	63–68
2 females, Java	163–164	61–62
9 females from the Philippines	162.5–175 (167.7)	57.5–63 (61)

There seems to be no difference in size between the sexes. As a matter of fact, the Siamese and Malay Peninsula bird is somewhat intermediate between the South China form and that of Java, but nearer the former.

I have not examined any authentic specimens of *B. j. amurensis*. La Touche[58] gives the measurement of a male as wing 214 and culmen 64 mm, and of a female as wing 209 and culmen 65 mm. Hartert's measurement for the wing is 200–214 mm.[59] Certainly I have measured no specimens with such long wings from Siam. *B. j. amurensis* is migratory. It may migrate to the eastward of Siam to its winter quarters. A stray might occur occasionally in Peninsular Siam or even farther north in eastern Siam.

Another form of green heron that may occasionally occur as a straggler in Peninsular Siam is *Butorides javanicus spodiogaster* Sharpe, of the Andaman and Nicobar Islands. It is darker gray on the under surface and has been taken as a straggler in the Philippines.

Gyldenstolpe[60] reports *B. j. actophilus* as generally distributed throughout Siam, though less abundantly in the northern districts; Robinson and Kloss[61] state that it is abundant everywhere on the coast of the Malay Peninsula. Probably it is partially migratory in the northern part of its Siamese range.

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[58] A handbook of the birds of eastern China, vol. 2, pt. 5, p. 456, 1934.

[59] Die Vögel der paläarktischen Fauna, Band 2, Heft 4, p. 1249, 1920.

[60] Ibis, 1920, p. 769.

[61] Ibis, 1911, p. 15.

ARDEOLA GRAYII (Sykes)

Ardea grayii Sykes, Proc. Zool. Soc. London, 1832, 157 (Deccan).

One female, Nong Preng, January 29, 1927; one female, Bangkok, December 12, 1925; one female, Lomsak, Pasak Valley, February 16, 1934; one female, Bandon, January 4, 1927.

I have been unable to find any reliable character to separate winter and immature specimens of *grayii* and *bacchus*. This is partly due to the inadequate series of the former at my command. The problem might be worked out in some museum having an adequate series of *grayii* and *bacchus* from regions where only one or the other occurs. As a rule *grayii* has a slenderer and less robust bill, but this varies in *bacchus* greatly with the age of the specimen and is uncertain. All winter records from Siam of the two species are open to question, and for that reason they are not cited.

One adult male of *grayii* from Lower Pegu measures: Wing, 210; culmen, 65; depth of bill at posterior border of nostril, 14; tarsus, 59; middle toe and nail, 60 mm.

The four females measure: Wing, 200–210 (207); culmen, 55–59 (57.7); depth of bill at posterior border of nostril, 12.5–13 (12.8); tarsus, 54–60 (56.5); middle toe and nail, 59–60 (59.5).

The four females from Siam were taken in winter. They average lighter above than specimens of *bacchus* of the same age, but the latter vary greatly in nonbreeding and immature plumages.

The range of *A. grayii* extends from the Persian Gulf east to India, Burma, Siam, and the Malay Peninsula.

Herbert[62] reports it breeding at Paknam, Ban Yang, Samkok, Ayuthia, and many other places in May, June, and July; Deignan[63] gives it as resident at Chiengmai, and it seems to be regarded as the common resident species in suitable localities all over over Siam and in the Malay Peninsula.

ARDEOLA BACCHUS (Bonaparte)

Buphus bacchus Bonaparte, Conspectus generum avium, vol. 2, p. 127, 1855 (Malay Peninsula).

One male (in breeding plumage), Muek Lek, April 17, 1933; one female, Bangkok, September 19, 1924; one unsexed, Koh Tao, off Bandon, September 24, 1928.

Dr. W. L. Abbott collected a female at Tanjong Badak, Tenasserim, March 25, 1904.

The two September specimens from Siam still have some of the breeding plumage remaining on the neck. The Tenasserim female is still in winter plumage, but there are one or two small red feathers coming in on the upper neck.

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[62] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 352, 1926.

[63] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 173, 1931.

In a series of 18 breeding adults of *bacchus* from China there are only two that have the outer primaries entirely white at the tip; in *speciosa*, all the breeding specimens examined, except one, have entirely white primaries. This seems to hold for winter birds. My series of *grayii* is too limited to enable me to work out the differences between winter and immature specimens of it and specimens of *bacchus* taken at the same time; *bacchus*, however, seems to have a thicker, heavier bill.

Nine breeding males from China (where *grayii* does not occur) measure: Wing, 215–240 (227.8); culmen, 61–65 (63); depth of bill at posterior border of the nostril, 14–15.5 (14.9); tarsus, 55.5–64 (59.2); middle toe and nail, 57–64 (59.7) mm. The female is somewhat smaller. Seven breeding females from China measure: Wing, 197–222 (209.4); culmen, 60–63 (60.4); depth of bill at posterior border of nostril, 13–15 (13.8); tarsus, 56–63 (57); middle toe and claw, 54–62 (57) mm.

The range of the species extends from northern China south through eastern Assam, Burma, Siam, and Indo-China to the Malay Peninsula and Borneo. Migratory in the northern part of its range.

I consider winter records of this species very uncertain and do not quote them. Robinson and Kloss [64] say it is rarer than *grayii* in Peninsular Siam but hard to distinguish except in the breeding season; Deignan [65] reports that at Chiengmai it is much less common during the breeding season than *A. grayii*.

It may be that in the extreme south of its range it is only a winter straggler and does not breed.

ARDEOLA SPECIOSA CONTINENTALIS Salomonsen

Ardeola speciosa continentalis SALOMONSEN, Orn. Monatsb., vol. 41, p. 41, 1933 (Bangkok, Siam).

One adult breeding male and two immature males, Bangkok, February 15 and April 23, 1924, December 26, 1925; one immature male, Bung Borapet, March 21, 1933.

Dr. W. L. Abbott took a female at Tanjong Badak, Tenasserim, December 29, 1900. This bird has the primaries including the tips and shafts white; wing, 195 mm. I feel quite certain that it belongs to this form.

Three breeding species of *Ardeola* occur in Siam, and while the adults in breeding plumage are easily differentiated, the young and immature are very difficult to separate. *A. speciosa* in any plumage usually has the primaries entirely white. Immature specimens have the outer primaries brownish at the tip, but not to the same extent as *grayii* or *bacchus*. *A. bacchus* and *A. grayii* have the two or three outer primaries gray on the outer web and tip and shafts brownish or blackish in the adult. Only rarely do adults of *A. bacchus* have the outer primaries entirely white like *speciosa*, and these are probably very old birds. My series of *A. grayii* is not sufficient to say whether the adults ever have the tips of the outer primaries white. The immatures of both *A. bacchus* and *A. grayii* have the outer primaries more or less dusky on the outer webs and tip, varying in degree probably with the age of the specimen. The immatures that I have assigned to *A. speciosa continentalis* have the primaries entirely white or with almost an imperceptible trace of grayish on the outer web of the first primary.

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[64] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 80, 1921.

[65] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 173, 1931.

The adults of the three species may be separated by the following key:

1. Back claret brown, with a slight slaty wash; neck dark olive-buff------ grayii
   Back slate color; neck not olive-buff------ 2
2. Pileum and upper neck clay color------ speciosa
   Pileum and upper neck prussian red------ bacchus

Both *speciosa* and *grayii* have the nuchal plumes white at the tips; these are lost after the breeding season.

Ardeola speciosa speciosa (Horsfield), of Java, Sumatra, Celebes, Borneo, and Sumbawa, is very similar to *continentalis* but apparently somewhat smaller. With only one adult of the latter before me, it is impossible to pass judgment on its distinctness, however.

The measurement of the wing in four males from Celebes is as follows: 205, 207, 209, 210 mm; in two males from Java, 192, 200 mm.

The wing in the single male of *continentalis* measures 213 mm; the wings in the three males (that I have called immature, but may really be the winter plumage) measure 220, 225, 234 mm. The bill in continental specimens also seems to average somewhat larger. The culmens in the four males from Siam measure 62–66.5 (64.9) mm; two males from Java and four from Celebes measure 59–64 (60.9) mm. The adults from Celebes were taken in winter and are without the nuchal plumes, and they are not in the streaked winter plumage; here they probably breed early and the breeding plumage is acquired early, the nuchal plumes being the last to be assumed.

Just what the range of *Ardeola speciosa continentalis* embraces is not known at present. So far it has been recorded only from Siam, Tenasserim, and the south of Indo-China.[66] It is quite possible the Sumatran records also belong to it.

BUBULCUS IBIS COROMANDUS (Boddaert)

Cancroma coromanda Boddaert, Table des planches enluminéez d'histoire naturelle, p. 54, 1783 (Coromandel Coast).

One adult male in breeding plumage and three adult males in winter plumage, Bangkok, May 27, 1926, August 9, 1924, and December 29, 1925.

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[66] See Delacour and Jabouille, Oiseaux l'Indochine Française, vol. 1, p. 64, 1931.

Dr. W. L. Abbott collected one adult female in breeding plumage at Prahmon, Trang, April 16, 1896, and two males molting into the breeding plumage, Trang, March 4, 1899. One of the latter is molting all the feathers of the neck and the new feathers are still in the sheaths; the feathers of the pileum are being renewed. A few buffy feathers have already appeared, but the majority are still in the sheaths.

This is an abundant heron throughout Siam and accompanies the herds of buffaloes. Herbert[67] reports that breeding colonies are found at Ban Yang, Samkok, Ayuthia, and many other places and that three or four eggs are laid to a set in June and July.

The form ranges from Korea and southern Japan to China, India, southeastern Asia, the Sunda Islands, and the Philippines and southward to New Guinea.

EGRETTA GARZETTA GARZETTA (Linnaeus)

Ardea garzetta Linnaeus, Systema naturae, ed. 12, p. 237, 1766 (Oriente).

One adult male, Bangkok, May 24, 1926; one adult male, Nong Kae, May 7, 1929; one adult male, Bung Borapet, June 27, 1932.

Dr. W. L. Abbott collected an adult female at Tanjong Dungun, Trengganu, September 19, 1900, and a male at Bok Pyin, Tenasserim, February 19, 1900.

This heron is probably resident throughout Siam. It has been recorded from Chiengmai in the north and as far south in Peninsular Siam as Patani. In winter the numbers are probably augmented by migrants from farther north. Herbert[68] states that it has been found breeding in June and July at Bang Yang, Ayuthia, and numerous other places.

The range of this form is from southern Europe to Japan and China, south to Africa and southeast Asia; migrant in the northern part but resident in the south.

Two other forms of *E. garzetta* are recognized, one from the Sunda Islands and the other from Australia.

DEMIEGRETTA SACRA (Gmelin)

Ardea sacra Gmelin, Systema naturae, vol. 1, pt. 2, p. 640, 1789 (Tahiti).

One male and one female, Koh Tao, September 20, 1928, and December 31, 1926; one male and one female, Sriracha, November 5 and 7, 1924. The male from Sriracha is in the white phase.

Dr. W. L. Abbott collected the following specimens: One female in the white phase, Prahmon, Trang, March 27, 1896; one male and one female, Pulo Langkawi, December 2, 1899. There is also a female collected by C. Boden Kloss from Koh Kra, Chantabun, December 15, in the United States National Museum.

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[67] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 352, 1926.

[68] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 351, 1926.

This is a purely coastal bird, usually frequenting islands off the coast. It occurs in two phases, a blue and a white.

Robinson [69] records it from Koh Samui and Koh Pennan; later from Koh Klum and Koh Kra[70]; Robinson and Kloss [71] from the vicinity of Puket; Gyldenstolpe [72] from Koh Lak; Robinson and Kloss [73] say it is common throughout the coasts of Malaya in suitable localities.

The species has a wide range, from southern Korea and the Riu Kiu Islands to Indo-China, Siam, Burma, the Malay Peninsula, the Sunda Islands, Philippines, Celebes, and south to New Guinea, Australia, and many Pacific Islands.

MESOPHOYX INTERMEDIA INTERMEDIA (Wagler)

Ardea intermedia WAGLER, Isis, p. 659, 1829 (Java).

Two males, Bung Borapet, June 20, 1930, and March 22, 1933.

Gyldenstolpe [74] reports that this heron is abundant at Bangkok, along the Menam Chao Phaya, and Tha Law, and later [75] states that a few specimens were seen along the coast in southwestern Siam; de Schauensee [76] took a male at Chieng Sen on January 10, and reports it common there and at Chieng Rai. These two localities are in northeastern Siam. Robinson and Kloss [77] state that it is distinctly uncommon in Southwest and Peninsular Siam.

The form ranges from Peninsular India and Ceylon, east to Japan and China, and south to Indo-China, Siam, the Sunda Islands and the Philippines. A related form is found in the Moluccas and Australia and another in Africa. It is probably more abundant than the records would indicate, for it is mistaken for the little egret (*Egretta g. garzetta*), which has the upper mandible black, or the cattle egret (*Bubulcus ibis coromandus*), which is smaller and has a shorter bill and tarsus. The bill in *Mesophoyx i. intermedia* is yellow except at the extreme tip, which is blackish.

NYCTICORAX NYCTICORAX NYCTICORAX (Linnaeus)

Ardea nycticorax LINNAEUS, Systema naturae, ed. 10, p. 142, 1758 (southern Europe).

One immature male, Bangkok, October 31, 1924.

Stuart Baker [78] records this form from Hua Takhae, central Siam, Febrary 10, 1916; Deignan [79] had only one record for the Chiengmai region, a solitary bird at Nawng Haw in September, but later de

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[69] Journ. Federated Malay States Mus., vol. 5, p. 143, 1915.

[70] Ibis, 1915, p. 726.

[71] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 92, 1919.

[72] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 137, 1916.

[73] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 79, 1921.

[74] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 72, 1913.

[75] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 136, 1916.

[76] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 587, 1930.

[77] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 78, 1921.

[78] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 42, 1920.

[79] Journ. Siam Soc. Nat. Hist. Suppl., vol 8, p. 173, 1931.

Schauensee[80] recorded a specimen from Chiengmai, February 1; Herbert[81] says it is said to breed at Bang-pa-in and Ayuthia and winters at Wat Koh Yai, Sambok; Gyldenstolpe[82] reports that the night heron is only a winter visitor to Siam. It probably breeds in limited numbers, however, in suitable localities. It has not been recorded from Peninsular Siam but probably occurs there in winter.

This heron has a wide range, breeding from Holland and Germany east to Japan and China and south to India, Indo-China, Siam, the Sunda Islands, the Philippines, and Africa.

GORSAKIUS MELANOLOPHUS MELANOLOPHUS (Raffles)

Ardea melanolopha RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 326, 1822 (Sumatra).

One immature male, Hupbon, near Sriracha, October 22, 1931; one immature male, Kao Sabap, November 8, 1933.

Dr. W. L. Abbott collected an adult male at Lay Song Hong, Trang, November 25, 1896; and two immature males in the Langkawi Group (Pulo Lada, November 30, 1899, and Pulo Terutau, November 16, 1903).

Dr. Abbott describes the soft parts of the adult male from Trang as follows: Iris greenish yellow; orbital skin green; bill dark horn brown above (the label here has had the ink dissolved by grease and the color of the lower mandible cannot be read); feet brownish green, yellowish behind toes.

This form ranges from Ceylon and the Malabar coast east to Assam, Burma, Siam, Indo-China, and south through Peninsular Siam, to the Malay States, Sumatra, Java, Borneo, and the Philippines.

Besides those listed above, specimens have been obtained in northern and eastern Siam by other collectors, and the bird probably occurs throughout the country in suitable localities. Owing to its nocturnal habits, however, it is seldom taken. Williamson informed Robinson and Kloss[83] that he found it breeding in heavy forest at Pak Chong in June and August.

IXOBRYCHUS SINENSIS SINENSIS (Gmelin)

Ardea sinensis GMELIN, Systema naturae, vol. 1, pt. 2, p. 642, 1789 (China).

One male and one female, Bangkok, March 3, 1925, and October 28, 1926; two males, Bung Borapet, June 19 and 27, 1932.

A female, received by the United States National Museum from Dr. W. L. Abbott, was collected by C. Boden Kloss at Tanjong Kalong, Singapore, April 20, 1900.

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[80] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 279, 1934.

[81] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 353, 1926.

[82] Ibis, 1920, p. 768.

[83] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 79, 1921.

This bird has been recorded in southwestern and Peninsular Siam from Ratburi, Petchaburi, Pakchan, Koh Lak, Junkseylon (Puket), and Koh Pennan. Robinson and Kloss [84] say of its occurrence in the Peninsula: "Probably partially migrating and commonest in winter"; Gyldenstolpe [85] reports it generally distributed throughout Siam.

The form has a wide range, occurring from northeastern China south to Indo-China, Burma, India, Ceylon, Siam, the Malay Peninsula, Moluccas, and New Britain. The species has a still wider range and has been split up into a good many forms of more or less doubtful validity.

NANNOCNUS CINNAMOMEUS (Gmelin)

Ardea cinnamomea Gmelin, Systema naturae, vol. 1, pt. 2, 643, 1789 (China).

Two adult males and two immature females, Bangkok, March 13 and April 7, 1926, and June 27 and October 27, 1924; one male (not fully adult), Sichol, Bandon, May 28, 1930.

Dr. W. L. Abbott took one adult male and one adult female, near base of Kao Nom Plu, Trang, March 9, 1897, and one immature female, Trang, January 22, 1897.

Dr. Abbott gives the soft parts as follows: Iris yellow; feet greenish; bill greenish yellow, brownish above and in a narrow line along commissure.

This species has been recorded from Pakchan, Patani, Junkseylon (Puket), Ratburi, Petchaburi, and Tasan, Chumpon, and Peninsular Siam;[86] Deignan [87] reports it resident at Chiengmai, but more abundant during the rains; Herbert [88] reports finding one nest with three eggs on June 25 near Bangkok, and a second nest with three eggs was found by his collector at Tachin on August 15. It is probably a common resident through Siam in suitable localities.

The species has a wide range, occurring from Manchuria south through China to Burma, India, Siam, Indo-China, the Philippines, and Celebes.

NANNOCNUS EURYTHMUS (Swinhoe)

Ardetta eurythma Swinhoe, Ibis, 1873, p. 74, pl. 2 (Amoy and Shanghai, China).

Dr. W. L. Abbott took an adult male of this bittern near the base of Kao Nom Plu, Trang, March 9, 1897.

I have found no previous records for this species from Siam, but since this was first written Deignan [89] reports the taking of a female near Ban Wai Tong Hong, Chiengrai, North Siam, May 2, 1936.

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[84] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 81, 1921.

[85] Ibis, 1920, 769.

[86] Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 5, p. 81, 1921.

[87] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 173, 1931.

[88] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 353, 1926.

[89] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 169, 1936.

It breeds from southeastern Siberia to China, the Japanese Islands, and Annam; in winter it migrates southward to Borneo, Celebes, the Malay Peninsula, and the Philippines.

The three small bitterns occurring in Siam may be distinguished in any plumage by the following key:

1.	Tibia feathered to the heel	Ixobrychus sinensis
	Tibia not feathered to the heel (lower part naked)	2
2.	Primaries grayish or slaty	Nannocnus eurythmus
	Primaries hazel or rufous	Nannocnus cinnamomeus

DUPETOR FLAVICOLLIS FLAVICOLLIS (Latham)

Ardea flavicollis LATHAM, Index ornithologicus, vol. 2, p. 701, 1790 (South China).

One male and three females, Bangkok, June 26, 1924, June 1, March 11, and October 28, 1926; two females, Bung Borapet, June 21, 1932.

Dr. W. L. Abbott took a female in Trang but neglected to date it.

The male from Bangkok taken October 28 (U.S.N.M. no. 308013) is molting on the back, and the dark slate feathers of the wings and back are being replaced by greenish-black feathers: the feathers of the chest and abdomen are blackish, those of the abdomen having a few buffy fringes; the feathers of the lower neck are slaty black, margined outwardly with white, the chestnut spotting of the foreneck not extending to the lower neck; top of head and cheeks slaty black; sides of neck ochraceous-buff.

The three females from Bangkok differ from the male as follows: Top of head and upperparts have a brownish cast; the abdomen is drab; the cheeks are bay, and the bay spotting on the foreneck is much more extensive and extends down onto the chest. These differences seem to hold and are sexual, as Stuart Baker [90] has stated.

There is a male in the United States National Museum (no. 279414) from Yachow, Hunan, China, taken May 17, that is quite different from any description that I have consulted. It is a blue-green slate above, on the hindneck, pileum, wings, and lower parts; the cheeks darker; the bay spots down the foreneck sparse and not extending to the lower neck; the white spotting on the median line of the neck also restricted; otherwise as in the normal plumage. This I imagine is the full breeding plumage only assumed in old birds.

Deignan [91] reports this form not uncommon south of Chiengmai from July to September; August Müller [92] records it from Junkseylon (Puket); Robinson and Kloss,[93] writing of Southwest and Peninsular Siam, say that it is rare wherever it occurs and that Williamson has found it breeding at Bangkok. Owing to its nocturnal habits, the form probably escapes observation and is more numerous than the scattered records indicate.

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[90] The fauna of British India, Birds, ed. 2, vol. 6, p. 368, 1929.

[91] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 173, 1931.

[92] Die Ornis der Insel Salanga, p. 84, 1882.

[93] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 81, 1921.

The form has a wide range, occurring from central and southeastern China to India, Siam, Indo-China, south through the Malay Peninsula to the Greater Sunda Islands, Philippines, and Celebes. Other forms occur on islands to the southward.

Family CICONIIDAE: Storks, Jabirus

IBIS LEUCOCEPHALUS (Pennant)

Tantalus leucocephalus Pennant, Indian zoology, p. 11, pl. 10, 1769 (Ceylon).

One adult female, Nakon Sritamarat, September 27, 1926.

Robinson[94] reports storks common in Bandon and records three specimens from Langkawi; Gairdner[95] gives it for the Petchaburi District; Robinson and Kloss[96] for Nong Kok, Ghirbi; Herbert[97] says his collector reported it as nesting at Ban Yang in July but did not succeed in obtaining eggs.

The species ranges from Ceylon through India to Burma, southwest China, Indo-China, and Siam. In Peninsular Siam it is said not to range south of Langkawi. I have seen no records from northern Siam.

ANASTOMUS OSCITANS (Boddaert)

Ardea oscitans Boddaert, Table des planches enluminéez d'histoire naturelle, p. 55, 1783 (Pondicherry).

One adult unsexed, Potaram, January 31, 1926; one female, Pasak River, October 19, 1932.

Gairdner[98] records this species from the Ratburi and Petchaburi Districts; Williamson[99] reports it common at Promden on the railway between Bangkok and Tachin, March 1917, and his collector secured some specimens at Tartia, central Siam, in July; Deignan[1] says flocks occur from June to November at Nawng Chang Fum between Chiengmai and Lampoon and that it was once seen flying over Chiengmai; Herbert[2] states that his collector took one fresh egg from a temple on Klong San Sep, February 22, and reported there were many nests; he also gives measurements and notes on the soft parts of two specimens shot at Samkok, August 31.

The openbill ranges from Ceylon and India to Assam, Burma, Siam, and Cochinchina; apparently there are no records for Peninsular Siam.

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[94] Journ. Federated Malay States Mus., vol. 5, p. 88, 1915.

[95] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 152, 1915.

[96] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 91, 1919.

[97] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 349, 1926.

[98] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 30, 152, 1914–15.

[99] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 39, 1918.

[1] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 172, 1931.

[2] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 350, 1926.

DISSOURA EPISCOPUS EPISCOPUS (Boddaert)

Ardea episcopus BODDAERT, Table des planches enluminéez d'histoire naturelle, p. 54, 1783 (India).

One adult male, Bandon, January 5, 1927; one adult male, Kao Soi Dao, Trang, January 9, 1934.

Dr. W. L. Abbott took the following: Two adult males, one adult female, and one unsexed, Trang (Prahmon, April 1, 1896; Tyching, July 21, 1896; Lay Song Hong, October 26, 1896, and January 21, 1897); and two males and one female, Tenasserim (Bok Pyin, February 12, 1900; Champang, December 14, 1903; Tanjong Badak, March 26, 1904).

Dr. Abbott gives the following notes: Iris red, sclerotic yellow; feet and legs dull brownish red; bill black, red at tip and along commissure; naked skin about head black; gular pouch black. Stomach of a male (no. 153617) contained small crabs, fish, and grasshoppers. Weight of a male from Prahmon, Trang, 4¼ pounds; of a male from Bok Pyin, Tenasserim, 5½ pounds. The female from Tanjong Badak, March 26, was building a nest when shot.

Dissoura episcopus neglecta Finsch is a smaller race with a differently colored bill and is confined to the Sunda Islands from Java east to Sumbawa and Celebes, as I have already pointed out.[3] It seems very doubtful whether it occurs on the mainland at all. The naked skin on the sides of the neck is an age character and not diagnostic of the race as claimed by Gyldenstolpe.[4] I have not, however, examined any specimens from north of Tenasserim.

D. episcopus episcopus ranges over practically all India and east to Indo-China and south in the Malay Peninsula to Kedah. It also occurs in the Philippines in a more or less intermediate form.

Grant[5] records it from Patani; Robinson[6] from Pulo Langkawi and Trang, Bandon,[7] Koh Samui[8]; Robinson and Kloss[9] from Nong Kok, Ghirbi; Gairdner[10] from Ratburi and Petchaburi; Gyldenstolpe[11] from Sakerat and Muang Pai, Korat Plateau, and Tha Law, Central Siam; and later[12] he took a male at Hat Sanuk and found it not rare at Koh Lak; Lowe[13] reports it plentiful on the Meping in March; Robinson and Kloss[14] state that it has not been found south of the latitude of Penang; de Schauensee[15] took a male at Chieng Sen, February 13. A related form is found in Africa.

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[3] Proc. U. S. Nat. Mus., vol. 64, art. 16, p. 28, 1924.

[4] Ibis, 1920, p. 766.

[5] Fasciculi Malayenses, pt. 3, p. 115, 1905.

[6] Journ. Federated Malay States Mus., vol. 4, p. 130, 1909.

[7] Journ. Federated Malay States Mus., vol. 5, p. 88, 1915.

[8] Ibid., p. 142.

[9] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 91, 1919.

[10] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 30, 152, 1914-15.

[11] Kungl. Svenska Vet.-Akad Handl., vol. 50, no. 8, p. 72, 1913.

[12] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 139, 1916.

[13] Ibis, 1933, 491.

[14] Ibis, 1911, 16.

LEPTOPTILOS JAVANICUS (Horsfield)

Ciconia javanica Horsfield, Trans. Linn. Soc. London, vol. 13, 188, 1821 (Java).

One male, Potaram, August 3, 1926.

Dr. W. L. Abbott took a male at Prahmon, Trang, April 10, 1896, and a male at Champang, Tenasserim, December 1903.

Dr. Abbott gives the color of the soft parts as: Iris dirty grayish white; bill pale brownish horn, tinged with greenish; feet and claws black; naked skin on neck yellow, a small patch below and in front dull red; scalp dirty gray. Weight of male from Trang, 9 pounds; male from Tenasserim, 11½ pounds.

Robinson and Kloss[16] record a specimen taken at Lay Song Hong, Trang, under the name *Leptoptilus dubius*, which they afterward corrected; Gyldenstolpe[17] took a female at Koh Lak and observed it south of Ratburi; Robinson and Kloss[18] record a male from Koh Naka Yai, Puket; and the same authors,[19] writing of Southwest and Peninsular Siam, say it is common throughout the area, generally in rice fields in mangrove swamps, and on the coastal flats.

The species ranges from Ceylon to eastern India, Burma, and southern China, south to Indo-China, Siam, the Malay Peninsula, Sumatra, Java, and Borneo.

Family PLEGADIDAE: Ibises and Spoonbills

PSEUDIBIS DAVISONI (Hume)

Geronticus davisoni Hume, Stray Feathers, vol. 3, p. 300, 1875 (Pakchan Estuary, Tenasserim).

One adult male, Ban Nong Keng, no date.

Dr. W. L. Abbott took an adult female at Prahmon, Trang, March 14, 1896; and an adult female at Champang, Tenasserim, December 19, 1903.

Dr. Abbott gives the soft parts in the female as follows: Iris orange-red; feet dull red; claws black; bill dark plumbeous; naked head black, a broad collar bluish white. In the male: Iris reddish orange; feet pinkish purple; bill leaden (jade color); head dull black; collar pale blue, darker behind.

Robinson[20] reports it from Lay Song Hong, Trang, from the Bandon River, Bandon,[21] and from Pulo Lontar[22]; Robinson and Kloss[23] from the Ghirbi region; Herbert [24] says that his collector reported it breeding at Bang Yang (Tachin).

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[15] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 279, 1934.

[16] Ibis, 1911, p. 16.

[17] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 141, 1916.

[18] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 92, 1919.

[19] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 75, 1921.

[20] Ibis, 1911, p. 17.

[21] Journ. Federated Malay States Mus., vol. 5, p. 89, 1915.

[22] Journ. Federated Malay States Mus., vol. 7, p. 141, 1917.

[23] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 92, 1919.

Dr. Abbott writes that in Trang it was commoner than *Thaumatibis gigantea.*

The species ranges from Pegu and Tenasserim to eastern Burma, southwestern Yunnan, Cochinchina, southern Laos, Cambodia, Siam, and Peninsular Siam.

This species, while similar in general color to *Thaumatibis gigantea,* is a much smaller bird and has a white patch on the inner lesser wing coverts. Culmen in *P. davisoni* about 180 mm or less; in *T. gigantea,* about 240 mm.

THAUMATIBIS GIGANTEA (Oustalet)

Ibis gigantea Oustalet, Bull. Soc. Philom. Paris, ser. 7, vol. 1, p. 25, 1877 (Cambodge).

Dr. W. L. Abbott took an adult male at Lay Song Hong, Trang, December 5, 1896; and an adult on Pulo Terutau, April 6, 1904.

Dr. Abbott thus describes the soft parts of the Trang specimen: Iris red; feet dark red; bill greenish horny (jade color); naked head dark brownish gray. Weight 7¾ pounds.

He writes as follows of the Trang specimen: "It was a solitary individual in a dry paddy field in the dry season and was quite unsuspicious and allowed me to come as close as I desired to shoot it. The Siamese all knew it, so it cannot be rare. On one occasion in the wet season in a paddy field, there must have been dozens of ibises, both *P. davisoni* and *T. gigantea,* but I did not secure any."

Gairdner [25] records it from the Ratburi and Petchaburi Districts, and one was sent to the British Museum from the latter place for identification; a specimen collected by him near Chom Beung, Ratburi, in March 1913, is recorded by Williamson,[26] who also later records a pair taken on December 24, 1918, on the coast of Cambodia, just south of the Siamese boundary; [27] Robinson and Kloss [28] saw one from the train just south of Koh Lak, and they record a male taken at Krongmon, Trang, February 19, 1910.[29]

The species has been recorded from Cambodia, southern Laos, Cochinchina, and southwestern and Peninsular Siam.

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[24] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 349, 1926.

[25] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 39, 152, 1914–15.

[26] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 71, pl., 1916.

[27] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 196, 1921.

[28] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 74, 1924.

[29] Ibis, 1911, p. 17, pl. 1.

Family ANATIDAE: Geese, Ducks, Swans

DENDROCYGNA JAVANICA (Horsfield)

Anas javanica Horsfield, Trans. Linn. Soc. London, vol. 13, p. 199, 1821 (Java).

One male, Petrieu, January 20, 1924; three males and two females, Nong Mong, Muang Krabin, August 25–28, 1925; one male, Potaram, February 4, 1926; five males and two females, Bung Borapet, June 23–27, 1932, and March 23, 1933; one female, Nakon Sritamarat, September 14, 1924.

Dr. W. L. Abbott collected two males and four females at Tyching, Trang, May 10–July 17, 1896.

Dr. Abbott describes the soft parts as follows: Iris dark brown; bill leaden blue, black at tip and on the culmen; feet blackish slate, claws and webs black; orbital skin dull orange or yellow.

This is a common duck in suitable localities all over Siam proper and in Peninsular Siam; also on some of the islands off the coast. Herbert [30] reports it breeding at Klong Rangsit, Sambok, and Pakret and states that the set usually consists of eight eggs, though ten sometimes occur.

The species ranges from India eastward to southern China, south to Indo-China, Siam, the Malay States, Sumatra, Java, and Borneo.

SARCIDIORNIS MELANOTA (Pennant)

Anser melanotus Pennant, Indian zoology, p. 12, pl. 11, 1769 (Ceylon).

One female, Nan River, near Kampang, northern Siam, March 21, 1928.

Gyldenstolpe [31] saw some specimens of this bird kept in captivity by the Laos Prince of Chiengmai and was told by the natives it was rather common in several parts of northern Siam. Williamson [32] records a male shot by Mr. Gibbins on the Klong Luang Peng, near Bangkok, in February. There seem to be few Siamese records for this species.

The species ranges from Africa and Madagascar to Ceylon, India, Burma, Tenasserim, Siam, Cochinchina, and southeastern China.

CASARCA FERRUGINEA (Pallas)

Anas ferruginea Pallas, *in* Vroeg's Beredeneerde catalogus, Adumbratiunculae, p. 5, 1764 (Tartary).

One adult, unsexed, in heavy molt on the underparts, Klong Rangsit, autumn 1925.

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[30] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 6, p. 354, 1926.

[31] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 134, 1916.

[32] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 42, 1918.

My previous record of this specimen [33] was the first for Siam. Deignan [34] has since recorded a specimen from Ban En on the middle Meping.

The species breeds from southeastern Europe east to the upper Amur and south to Persia, the Himalayas, and southwestern China; in winter it migrates to northern Africa, India, Burma, southern China, northern Annam, and Siam.

NETTION CRECCA (Linnaeus)

Anas crecca Linnaeus, Systema naturae, ed. 10, p. 126, 1758 (Sweden).

One male, changing from an eclipse to nuptial plumage, Klong Rangsit, December 28, 1931.

At the time of capture this specimen was an addition to the Siamese list and was later recorded as such.[35] Rodgers and Deignan [36] have since recorded a female taken at Chiengmai, December 5, 1931. The species is of wide distribution, and there are many records south of its usual range. Robinson [37] records a female from Kuala Lumpur, Selangor, and there is a specimen in the British Museum from Malacca.

The species breeds from Iceland, northern Europe, and northern Asia to the Aleutian Islands and winters in Africa, India, Burma, southern China, Siam, Indo-China, and the Philippines.

QUERQUEDULA QUERQUEDULA (Linnaeus)

Anas querquedula Linnaeus, Systema naturae, ed. 10, p. 205, 1758 (Europe; restricted type locality, Sweden).

One male, Petrieu, January 20, 1924; two females, Klong Rangsit, December 21, 1925, and 28, 1931; one male, Potaram, February 7, 1926; one male and one female, Nong Preng, January 29, 1927 (Dr. Smith has written on the label of the male, abundant); one male and two females, Bung Borapet, March 28, 1933.

Gairdner [38] records this teal from the Ratburi and Petchaburi Districts; de Schauensee [39] secured a pair from Hua Takay, December 28; Deignan [40] states that it is present in small numbers at Chiengmai from October 24 to February 20.

The species breeds in northern Europe and northern Asia and winters south of its breeding range; in Asia from Arabia, India, Burma, Siam, the Indo-Chinese countries, and islands to the southward as far as New Guinea.

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[33] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 153, 1933.

[34] Journ. Siam Soc. Nat. Hist. Suppl. vol. 10, p. 132, 1936.

[35] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 154, 1933.

[36] Proc. Biol. Soc. Washington, vol. 47, p. 92, 1934.

[37] Journ. Federated Malay States Mus., vol. 5, p. 18, 1913.

[38] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 31, 153, 1914–15.

[39] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 588, 1930.

[40] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 75, 1936.

DAFILA ACUTA ACUTA (Linnaeus)

Anas acuta Linnaeus, Systema naturae, ed. 10, p. 126, 1758 (Europe; restricted type locality, Sweden).

One female, Paknampo, December 1925; one male and one female, Klong Rangsit, December 28, 1931.

Gyldenstolpe[41] states that the Laos Prince of Chiengmai had some pintails in confinement taken at Pra Kao, a small town in northeastern Siam; Deignan[42] says they are uncommon during cold weather at Chiengmai, specimens being taken in October and December.

The form breeds in Iceland, northern Europe, and northern Asia and migrates in the winter to northern Africa, Ceylon, India, Burma, Siam, southern China, Tonkin, and Annam.

SPATULA CLYPEATA (Linnaeus)

Anas clypeata Linnaeus, Systema naturae, ed. 10, p. 124, 1758 (Europe; restricted type locality, Sweden).

One female, Klong Rangsit, fall 1925.

Williamson[43] recorded a male shoveler shot by A. H. Duke at Klong Luang Peng, about 30 miles east of Bangkok, January 22, 1916.

The species breeds from northern North America to northern Europe and northern Asia and migrates south to winter; in Asia to the Persian Gulf, India, Burma, southern China, Tonkin, Annam, and Siam.

CHENISCUS COROMANDELIANUS COROMANDELIANUS (Gmelin)

Anas coromandeliana Gmelin, Systema naturae, vol. 1, pt. 2, p. 522, 1789 (Coromandel, India).

One immature male, Petrieu, January 20, 1924; six males, Nong Mong, Muang Krabin, August 20–26, 1925; six males, two females, and one unsexed, Potaram, January 31–February 4–6, 1926; one male, Bangkok, May 25, 1926; one immature male, Nong Preng, Jauary 29, 1927; 15 males and 12 females, Bung Borapet, June 20–27, 1932, and March 23–28, 1933.

The cotton teal apparently is generally distributed throughout Siam in suitable localities. Robinson and Kloss[44] state that it is said to be common at the north end of the Talé Sap and Talé Noi in Patalung, but rare everywhere else in the Peninsula.

The form ranges from Ceylon, India, and Burma east to southern China and south to Indo-China, Siam, the Malay Peninsula, the Philippines, Borneo, Java, Sumatra, and Banka. A related form occurs in eastern Australia.

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[41] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 135, 1916.

[42] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 174, 1931.

[43] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 64, 1916.

[44] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 82, 1921.

NYROCA BAERI (Radde)

Anas (*Fuligula*) *baeri* Radde, Reisen im Süden von Ost-Sibirien, vol. 2, p. 376, pl. 15, 1863 (southeast Siberia).

One female, Potaram, Meklong River, January 31, 1926.

My previous record of this specimen [45] was apparently the first for Siam; Deignan [46] has since reported securing it at Chiengmai, March 3, 1936.

The species breeds from Transbaikalia to the lower Amur and winters in southern China, Assam, Burma, Bengal, and Siam.

There are a number of other ducks that breed in northern Asia and migrate south in winter that have been taken in Indo-China; without much doubt some of these will eventually be taken in Siam, and collectors should not neglect an opportunity to examine sportmen's bags for unusual specimens and have them identified and, if worthy, placed on record.

Family ACCIPITRIDAE: Hawks, Old World Vultures, Harriers, Ospreys

ELANUS CAERULEUS VOCIFERUS (Latham)

Falco vociferus Latham, Index ornithologicus, vol. 1, p. 46, 1790 (India).

One male and one female, Bangkok, September 27 and 29, 1924.

Dr. W. L. Abbott took one immature and two adult females at Tyching, Trang, June 30, July 25, and August 6, 1896.

These Siamese specimens are considerably paler above and the black wing patch smaller than in *E. c. caeruleus;* they seem to have a somewhat longer wing. The wing of the male measures 285 mm, that of the three females 270, 281, and 282 mm. The wings of four males from East Africa measure 260, 268, 269, and 270 mm; three females, 265, 268, and 270 mm. These measurements do not agree with Kirke Swann's [47] or Stuart Baker's.[48]

This kite is probably resident in Trang, and it is known to be resident near Bangkok. If it does not belong to this race, I do not know where else to place it; it certainly does not belong to the African form.

Most of the Siamese records of this kite come from Bangkok or vicinity, where Herbert [49] has found it breeding at Samkok and Bang Boon and secured eggs in January, February, July, and August; he concluded that two broods were raised and that a set consisted of three or four eggs.

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[45] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 154, 1933.

[46] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 75, 1936.

[47] A synopsis of the Accipitres, ed. 2, pt. 3, p. 161, 1922.

[48] The fauna of British India, Birds, ed. 2, vol. 5, p. 125, 1928.

[49] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 332, 1926.

Deignan [50] reports observing a specimen 2 kilometers north of Chomtong, northern Siam.

The form ranges from India to Assam, Burma, Yunnan, Siam, and Indo-China, south in Peninsular Siam to Trang.

MACHAERHAMPHUS ALCINUS Westerman

Machaerhamphus alcinus WESTERMAN, Bijdr. Dierk., vol. 1, p. 29, pl. 12, 1848 (Malacca).

Dr. W. L. Abbott took a fine male of this strange hawk at Lay Song Hong, Trang, August 19, 1896.

He gives the following notes: Iris golden-yellow; feet leaden, claws black; bill black. Crepuscular hawk like a goatsucker. Stomach contained eight small bats, which had been swallowed whole.

Robinson and Kloss [51] say this bat hawk is of crepuscular habits and will certainly be found to occur in the vicinity of most of the limestone hills that are so common in Lower Siam; Robinson [52] reports meeting two nesting pairs on the banks of the Bandon River; they were nesting high up in very lofty trees. The species is widely spread throughout the Peninsula and at one time was not uncommon in the vicinity of Kuala Lumpur.

This bat hawk ranges from Tenasserim and the Malay Peninsula through the Sunda Islands to New Guinea. A related species is found in Africa.

LOPHASTUR JERDONI JERDONI (Blyth)

Pernis jerdoni BLYTH, Journ. Asiat. Soc. Bengal, vol. 11, p. 464, 1842 (Malacca).

One adult male, Pak Chong, eastern Siam, November 17, 1925; one immature male, Aranya, July 11, 1930; one adult male, Kao Soi Dao, Trang, January 6, 1934.

There are few records of this hawk for Siam. Stuart Baker [53] records a female from Hupbun and a male from Klong Song, near Petrieu, both in Herbert's collection; Robinson and Kloss [54] record four specimens from Trang and two from Langkawi. It will probably be found to occur all over Siam when the country is more thoroughly explored.

The form ranges from Sikkim to eastern Assam south to Burma, Siam, Peninsular Siam, and Sumatra. The species has been divided into a number of races.

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[50] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 10, p. 64, 1935.

[51] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 94, 1923.

[52] Journ. Federated Malay States Mus., vol. 5, no. 3, p. 90, 1915.

[53] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 30, 1920.

[54] Ibis, 1911, p. 25.

BAZA LEUPHOTES BURMANA W. L. Sclater

Baza lophotes burmana W. L. Sclater, Bull. Brit. Orn. Club, vol. 41, p. 3, 1920 (Maliwoon, Tenasserim).

One male, Kao Bantad, Krat, December 23, 1929; one male, Kao Soi Dao, Trang, January 12, 1934.

The following specimens collected by Dr. W. L. Abbott are in the United States National Museum: One male and one female, Trang (Lay Song Hong, December 3, 1896, and Trang, February 13, 1897); five males and three females, Sullivan Island, Mergui Archipelago, January 29–February 2, 1900. In addition, there is a female from Lat Bua Kao, eastern Siam, collected on October 11, 1916, by C. Boden Kloss, and an immature male from Me Taqua, Raheng, western Siam, collected on June 13, 1924, by K. G. Gairdner.

Dr. Abbott describes the soft parts as follows: Iris dark brown; bill and cere leaden; tip of bill dark horn brown; feet leaden, claws black. He notes the stomach contents of the eight specimens collected on Sullivan Island to consist exclusively of insects. Evidently it is a very useful bird.

The male from Krat has the pectoral band below the white crescent chocolate, and a female from Sullivan Island approaches it; in the remainder of the series the pectoral band is black.

This race is apparently not uncommon throughout Siam proper and in the Malay Peninsula. The species ranges from Assam south of the Brahmaputra south to Burma and Siam and east to Cochinchina, Cambodia, Annam, Laos, southern China, and south to Peninsular Siam.

This is a beautiful crested hawk. It is black, with a broad, white crescent on the jugulum, then a narrow black pectoral band, the breast and sides banded chocolate and cream-buff; the belly and under tail coverts black, a chocolate patch at the base of the inner primaries, with a bold white mark near the tip of the secondaries, the tertials white at the base, showing through.

This species is the type of the genus *Baza* Hodgson, and in my opinion the genus is monotypic. It differs from *Lophoastur* in its proportionally longer crest and longer wings, weaker feet and bill, and third outer primary longest instead of the fourth.

The other form of the species, *Baza leuphotes leuphotes* ranges to the northward and westward of *burmana* and is said to differ from *burmana* in having the band across the chest rufous and chestnut instead of black.

Robinson and Kloss [55] state that in the Malay States this falcon is only a winter visitor, so both forms probably occur in Siam during winter. I have examined no authentic specimens of typical *leuphotes*.

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[55] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 91, 1923.

PERNIS APIVORUS PTILORHYNCHUS (Temminck)

Falco ptilorhynchus Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 8, pl. 44, 1821 (Java and Sumatra; in text to pl. 270, Java).

One male, Tha Chang, Pak Chong, March 15, 1927, in immature plumage (wing, 363 mm); one male, Pak Chong, May 4, 1926, buffy brown below, with narrow black shaft streaks (wing, 375 mm). Both specimens are without a crest.

One immature female was collected by Dr. W. L. Abbott at Lay Song Hong, Trang, October 30, 1896. This specimen is in an almost uniform cinnamon-buff plumage below, the feathers of the belly with lighter edgings; there are no facial stripes whatever; the crest is long and black; wing, 395 mm.

This form ranges from Borneo, Java, and Sumatra to the Malay States, Peninsular and eastern Siam, and southern Tenasserim. It ranges throughout the Malay Peninsula but does not seem to be common anywhere. The various plumages are not well understood.

Gyldenstolpe [56] took a young male at Koh Lak, January 14, 1915. Robinson [57] recorded a specimen from Lem Ngob, southeastern Siam, the only record I have seen from that part of the country. Robinson and Kloss [58] list an immature female from Tapli, Pakchan, March 8, 1919.

MILVUS MIGRANS GOVINDA Sykes

Milvus govinda Sykes, Proc. Zool. Soc. London, 1832, p. 81 (Deccan).

One female, Nong Kae, May 7, 1929; one male, Sam Roi Yot, November 17, 1932.

This form ranges from India to Burma, Siam, and Southern Indo-China; rarely to the Malay Peninsula.

This is the resident form of kite in Siam. Herbert [59] reports it breeding on the river north of Bangkok, laying two or occasionally three eggs in January and February; Robinson and Kloss [60] state that it is a very rare visitor to the Malay Peninsula, where it has been taken as far south as near Taping, Perak, in November.

This species can be distinguished from *M. lineatus* by its smaller size.

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[56] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 130, 1916.

[57] Ibis, 1915, p 728.

[58] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 94, 1923.

[59] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 331, 1926.

[60] Journ. Nat. Hist. Soc. Siam, vol. 5, 1923, p. 101.

HALIASTUR INDUS INDUS (Boddaert)

Falco indus Boddaert, Table des planches enluminéez d'histoire naturelle, p. 25, 1783 (Pondicherry).

One adult male, Bangnara, Patani, July 11, 1926; one female, Kao Soi Dao, Trang, January 21, 1934; one egg, Bung Borapet, January 27, 1933.

The specimen from Bangnara has the black streaking on the head and chest heavier and the streaks broader than any specimen I have seen. Bangnara is on the east side of the Peninsula, and it may be that this form wanders or occurs farther south on this side. This is supposed to be the form occurring in northern and central Siam, where it is said to be not uncommon.

Dr. W. L. Abbott collected two adult males, one adult female, and one immature female in Trang, March 12, April 3, and July 25, 1896; one immature female, Kamamun, Trengganu, October 2, 1900; one female, Tanjong Badak, Tenasserim, March 15, 1900; one female, Hastings Island, Mergui Archipelago, December 14, 1900.

In Dr. Abbott's specimens and the female collected by Dr. Smith in Trang the shaft streaks on the head and chest are not so heavy as in the Bangnara male mentioned above; they seem to average coarser than in specimens from Java and the Philippines. If *H. i. intermedius* occurs in the Malay Peninsula at all, it must be confined to the extreme southern end, or the two forms may wander after the breeding season. It would be better to place all the records for Siam and Peninsular Siam under *H. i. indus* until more is known of the distribution of the two forms in this part of Asia.

This is a common resident form all over Siam proper and down Peninsular Siam as far as the Malay States. Herbert [61] found it breeding at Samkok and Ayuthia, the set consisting of two eggs laid the latter part of January or in February, or occasionally in March.

The form ranges from Ceylon, India, Burma, Indo-China, Siam, and Peninsular Siam as far as Trang or somewhat farther.

ACCIPITER BADIUS POLIOPSIS (Hume)

Micronisus poliopsis Hume, Stray Feathers, vol. 2, p. 325, 1874 (northern Pegu).

Three immature males and two adult females, Bangkok, January 11, May 5, and October 24, 1924, December 28 and 29, 1925; two adult males and one immature female, Nong Khor, near Sriracha, September 25, 1925, and February 5 and 6, 1927; one immature female, Pang Sok, August 12, 1926; one subadult female, Kanburi, April 16, 1928; one immature female, Koh Tao, September 21, 1928; one immature female, Knong Phra, April 13, 1929; one immature male, Aranya, July 23, 1930; one adult female, Chiengdao, January 28, 1932.

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[61] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 330, 1926.

Dr. Smith gives the color of the soft parts as: Iris, golden-yellow; bill plumbeous; cere green; feet and legs yellow.

The following specimens collected by Dr. W. L. Abbott are in the United States National Museum: One adult male, Hastings Island, December 12, 1900, and one adult male and one adult female, High Island, December 31, 1900, both islands in the Mergui Archipelago; one adult and one immature female, Tanjong Badak, January 11, 1900; one adult male and one adult female, Champang, December 13, 14, 1903; one adult female, Telok Krang, February 15, 1904, the three latter in southern Tenasserim; one immature female, Trang, Peninsular Siam, January 28, 1899.

The females are darker and more slaty than the males. The two adult males from Siam and a male from Daban, southern Annam, are much lighter above than the same sex from Tenasserim, but this does not seem to hold in the females, and it may be only individual variation.

This is a common resident all over Siam proper and down Peninsular Siam at least to Trang, or somewhat farther south. The form ranges from southern Assam to Siam, southern China, Indo-China, and the Malay Peninsula.

ACCIPITER AFFINIS Hodgson

Accipiter affinis Hodgson, Bengal Sporting Mag., new ser., vol. 8, p. 179, 1836 (Nepal).

One adult female, Bangkok, October 16, 1924; one immature female, Lam Klong Lang, Pak Jong, June 5, 1925; one immature male, Lat Bua Kao, July 29, 1929.

Dr. W. L. Abbott purchased in Penang an unsexed specimen said to have been shot in the Province of Wellesley; wing, 189 mm.

The United States National Museum possesses a male of typical *Accipiter virgatus* from Java, and it is so totally different from *affinis* or anything from the continent that I quite agree with Robinson and Kloss's remarks under *A. gularis* [62] that no resident form of *virgatus* occurs on the mainland. An adult male of *affinis* from Mount Omei, Szechwan, in the United States National Museum is not so dark above as *virgatus;* below the breast is not quite so richly colored, and the bars on the belly and tibia are grayish not blackish or very dark brown, as in *virgatus;* the latter is much smaller. The wing in male *virgatus* measures 146 mm; in *affinis* from Szechwan, 167 mm.

Gyldenstolpe [63] records a specimen from Khun Tan as *A. virgatus;* Robinson [64] records it from Koh Kut and Koh Rang; Baker [65] a female from Chan Teuk; Robinson and Kloss record an adult female from Hat Sanuk, near Koh Lak, taken April 14, 1919 (evidently the southernmost record for Siam).[66] It is probably resident in Siam.

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[62] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 104, 1923.

[63] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 234, 1915.

[64] Ibis, 1915, p. 728.

[65] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 29, 1920.

The species ranges from the Himalayas to the mountains of western China, Siam, Tonkin, and Laos. In winter it moves somewhat farther south.

Just how to distinguish immature *affinis* from *gularis* is difficult to answer; in the latter the closed wings come nearer to the tip of the tail. In comparable plumages *A. affinis* is more heavily marked below. In adult plumage there is no difficulty. *A. gularis* is much paler, with a hair-line dark streak down the center of the throat and a proportionally shorter tail; the central throat streak in *affinis* is comparatively heavy.

ACCIPITER GULARIS NISOIDES Blyth

Accipiter nisoides BLYTH, Journ. Asiat. Soc. Bengal, vol. 16, p. 727, 1847 (Malacca)

Dr. W. L. Abbott collected an immature male and an immature female on Pulo Terutau, Langkawi Group, November 8 and 21, 1903.

Gyldenstolpe [67] records two males from Pak Koh, March 24 and April 17, and an immature female from Khun Tan, May 24, 1914; Robinson [68] records a female from Klong Yai, January 4, and a male from Ok Yam, January 3, 1915; Deignan [69] states that the form occurs on Doi Sutep from 2,500 to 3,500 feet and that he shot an immature bird on the plain in July; Robinson and Kloss [70] record three males from Kandhuli, Chaiya, Peninsular Siam, taken September 13–22.

Winter-taken birds may be *A. g. gularis,* but closely related races of this genus are hard to discriminate, especially in immature plumage.

A. g. nisoides is said to be resident from southern China to Indo-China, Burma, and Siam, probably going farther south in winter.

LOPHOSPIZA INDICA (Pearson)

Astur indicus PEARSON (Hodgson MS.), Bengal Sporting Mag., vol. 7, p. 177, 1836 (Nepal).

One female, Bandon, January 5, 1927; one female, Kao Bantad, Krat, December 27, 1929; one immature male and one immature female, Lat Bua Kao, July 30 and August 8, 1929; one male, Huey Yang, October 1, 1930; one female, Pang Meton, May 1, 1931; one immature female, Khun Tan, 3,000 feet, February 15, 1932; one immature female, Klong Yai, Sriracha, July 25, 1932.

The following specimens were collected by Dr. W. L. Abbott: Five males and one female, Trang, April 3 and September 1, 1896,

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[66] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 105, 1921.

[67] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 125, 1916.

[68] Ibis, 1915, p. 727.

[69] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 175, 1931.

[70] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 104, 1923.

February 15, 1897, December 26, 27, 1898, and February 13, 1899; one female, Sullivan Island, February 2, 1900, and one male, Domel Island, February 24, 1900 (both in Mergui Archipelago); one male, Champang, Tenasserim, December 22, 1903.

This must be a very common hawk throughout Siam and down the Malay Peninsula. It is resident in Siam proper but in the Peninsular region may be only a winter resident. The bird is much larger than *Lophospiza trivirgata,* and if the ranges of the two given by Stuart Baker [71] are correct, then they must overlap. In my opinion they should be treated as distinct species.

The form ranges from the eastern Himalayas to Assam, Burma, Indo-China, Siam, and Peninsular Siam to Trang or somewhat farther.

BUTASTUR INDICUS (Gmelin)

Falco indicus GMELIN, Systema naturae, vol. 1, pt. 1, p. 264, 1788 (Java).

One female, Pak Chong, November 15, 1925; one female, Koh Chang, January 12, 1926; one female, Kao Sabap, November 4, 1933.

The following specimens collected by Dr. W. L. Abbott are in the United States National Museum: One male, Pulo Langkawi, December 9, 1899; two females, Tanjong Badak, Tenasserim, January 9, 12, 1900, and December 9, 1903; and one female, Champang, Tenasserim, December 17, 1903.

Gyldenstolpe [72] reports it from Khun Tan, northern Siam, Rayong, southeastern Siam, and Bangkok; de Schauensee [73] took a female on Doi Sutep and a pair at Chiengmai on his third expedition, 1,500 feet, December 26 [74]; Robinson and Kloss [75] report it rare in Peninsular Siam, where it is probably only a winter visitor.

The species has a wide range. It breeds in southeastern Siberia, Korea, Japan, and northeastern China and migrates south in fall through Burma, the Malay Peninsula, Java, Indo-China, and the Sunda Islands to New Guinea. In the Philippines, as well as on some other islands, it is said to be both resident and migrant.

NISAETUS NIPALENSIS FOKIENSIS (W. L. Sclater)

Spizaetus nipalensis fokiensis SWANN, A synoptical list of the Accipitres, ed. 1, p. 72, Nov. 7, 1919 (nomen nudum).—W. L. SCLATER, Bull. Brit. Orn. Club, vol. 40, p. 37, Dec. 8, 1919 (Fokien Province, southern China).

One female, Kao Sabap, October 27, 1933. The wing in this specimen measures 420 mm, which is rather small even for this form.

Dr. W. L. Abbott collected an immature male on Pulo Terutau, Langkawi Group, November 9, 1903.

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[71] The fauna of British India, Birds, ed. 2, vol. 5, pp. 154-155, 1928

[72] Ibis, 1920, p. 748.

[73] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 578 ,1930

[74] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 270, 1934.

[75] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 93, 1923.

The range of the form, according to Stuart Baker, is southern China and the Indo-Burmese countries to Tenasserim.

Robinson and Kloss's [76] record of *Spizaetus nipalensis* from Pulo Terutau and that of Gyldenstolpe [77] from Hue Sai, northwest of Koh Lak, seem to belong to this form, which had not been separated at the time they wrote. Robinson and Kloss [78] record a female from Tapli, Pakchan, taken March 3; de Schauensee [79] took a female at Chiengmai, 4,500 feet, February 27.

NISAETUS ALBONIGER Blyth

Nisaetus alboniger Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 173, 1845 (Malacca).

Dr. W. L. Abbott collected two males at Lay Song Hong, Trang, August 26 and December 31, 1896.

Dr. Abbott describes the soft parts as: Iris yellow or greenish yellow; bill and cere black, lower mandible leaden at base; feet yellow, claws black. The contents of the stomachs in both specimens contained the remains of lizards.

Herbert [80] recorded this species for Siam, but without locality; later Baker [81] examined the specimen and recorded it as from Tung Song, Peninsular Siam. Besides the two collected by Dr. Abbott, this is apparently the only record for Siam.

The species ranges from southern Tenasserim south through Peninsular Siam to the Malay States and the Sunda Islands as far as Borneo. It seems to be commoner in the southern part of its range.

The wing in the two specimens measures 310–317 mm. In one stage of the immature plumage the head and lower parts are white and the back and wings light blackish brown, each feather edged with white. In any plumage this species can be distinguished by size from the other two species of the genus occurring in Siam.

NISAETUS CIRRHATUS LIMNAETUS (Horsfield)

Falco limnaetus Horsfield, Trans. Linn. Soc. London, vol. 13, p. 138, 1821 (Java).

The following specimens collected by Dr. W. L. Abbott are in the United States National Museum: Two males and seven females from Trang (Prahmon, March 13, 1896; Tyching, May 2–July 3, 1896; Lay Song Hong, September 7–December 19, 1896; Chong, January 24, 1897).

Dr. Abbott thus describes the soft parts: Iris brownish yellow, grayish brown, or golden-yellow; bill black; cere dull black; feet yellow, claws black. He gives the weight of four females as 3, 3¼, 3½, and 4 pounds.

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[76] Ibis, 1911, p. 22.

[77] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 126, 1916.

[78] Journ. Nat. Hist. Soc. Siam, vol. 5, no. 2, p. 96, 1923.

[79] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 270, 1934.

[80] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 58, 1916.

[81] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 28, 1920.

Of the nine specimens from Trang, one male and four females are fuscous-black; two females are white below with a few light-drab markings, the head above yellowish buff streaked with a few sagittate fuscous-black markings; a male and female are rather heavily streaked below with fuscous-black, the pileum and nape fuscous-black, the feathers edged with buffy brown, the thighs barred with rusty brown. Dr. Abbott has marked one of the white-breasted females as immature, and it is my opinion that this phase is the young, probably in the first winter plumage, that the heavily streaked specimens are older birds in the second year, and that the fuscous black specimens are the fully adult birds. They breed in the second plumage, as a female shot from the nest by Count Gyldenstolpe at Koh Lak, January 20,[82] was in this plumage.

The only specimen examined by me from Java is a glossy fuscous-black male, with a wing measurement of 372 mm. The wing in the black Trang male measures 367 mm.

The crest in this form is comparatively short, and the feathering of the tarsi does not extend down on the toes as it does on the other two species of the genus occurring in Siam.

N. c. limnaetus ranges from northern India to eastern Bengal and Assam, south through Siam to the Malay Peninsula, Sumatra, Java, Borneo, and the Philippine Islands. It has been recorded from pretty much all over Siam, but evidently is more abundant in Peninsular Siam than farther north. Robinson [83] has recorded it from Koh Pennan, off Bandon.

HIERAAËTUS PENNATUS (Gmelin)

Falco pennatus GMELIN, Systema naturae, vol. 1, pt. 1, p. 272, 1788 (no locality; France has been suggested).

Dr. W. L. Abbott collected one adult male (black phase) and two immature males in Tenasserim (Maliwun, March 23, 1900, and March 9, 1904; and Telok Krang, February 16, 1904).

He describes the colors of the soft parts of the adult male: Iris dark brown; bill and cere black; toes pale dirty yellowish, claws black.

The adult male from Telok Krang is in the black phase. It is bone brown all over and is molting into an even darker brown (near light seal); the pileum and nape have the bases of the feathers white and wood brown subterminally, these colors showing through and accentuating the seal-brown tips; the longer, upper tail coverts are light buffy brown; the bases of the middle tail feathers are whitish, almost hidden by the coverts. Superficially this specimen is almost identical with the black phase of *Nisaetus cirrhatus limnaetus*, but it has weaker feet;

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[82] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 127, 1916.

[83] Journ. Federated Malay States Mus., vol. 5, p. 144, 1915.

the feathers of the pileum and nape are more lanceolate; the nostril is not so rounded; and it is smaller. Wing, 370 mm.

The two immature specimens have white heads and underparts streaked with very dark brown; the upperparts are dark brown, with white or light-brown edges to the feathers.

I have had no authentic specimens of *H. pennatus* with which to compare the present specimens, and they may not belong here, but if not there seems to be no other species to which they could be assigned.

Stuart Baker [84] gives the range as South Europe, North Africa, West and Central Asia to India, Ceylon, Burma, and the Malay Peninsula. I know of no authentic records for Siam, however.

LOPHOTRIORCHIS KIENERII KIENERII (Sparre)

Astur kienerii Sparre, Mag. Zool., 1835, cl. 2, pl. 35 (Himalaya).

Dr. W. L. Abbott collected an adult male at Lay Song Hong, Trang, November 18, 1896.

He gives the following description of the soft parts: Iris dark brown; bill black, leaden at the base, cere yellow; feet yellow, claws black.

This is a crested hawk with feathered tarsi similar to *Hieraaëtus* and *Nisaetus* but with slenderer feet and proportionally longer and sharper claws. It is black above; throat and chest creamy white with black streaks along the side; breast and abdomen cinnamon-rufous with bold black shaft streaks; tail like the back with fuscous cross bars, the tip narrowly edged with wood brown; thighs like the abdomen with blackish markings near the base next to the body; wing, 327 mm.

This form ranges from the Himalayas east to Assam and south to South Annam and the Malay Peninsula. Gairdner [85] took a specimen in the Petchaburi District that was identified at the British Museum; Chasen and Kloss [86] record one taken in the Raheng District, also by Gairdner. This is a rare bird, and few specimens have been taken in Siam. Deignan [87] gives two sight records for the Chiengmai region, both in February.

A closely related form, *Lophotriorchis kienerii formosus* (Stresemann), inhabits Sumatra, Java, Borneo, Philippines, Celebes, and the Lesser Sunda Islands east to Sumbawa, and possibly the southern part of the Malay Peninsula.

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[84] The fauna of British India, Birds, ed. 2, vol. 5, p. 79, 1928.

[85] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 151, 1915.

[86] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 162, 1928.

[87] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 76, 1936

CUNCUMA LEUCOGASTER (Gmelin)

Falco leucogaster GMELIN, Systema naturae, vol. 1, pt. 1, p. 257, 1788 (no locality; New South Wales, Mathews).

Dr. W. L. Abbott collected the following: One adult male and one adult female, Trang (Prahmon, March 27, 1896, and Trang, December 23, 1898); one adult female and one immature female, Mergui Archipelago (Sullivan Island, February 5, 1900; Bentinck Island, March 8, 1900); and one immature female, Kamamun, Trengganu, October 1, 1900.

Dr. Abbott gives the colors of the soft parts of an adult female from Bentinck Island as follows: Iris dark brown; bill leaden, blackish at tip; cere brownish; feet dirty white, claws black. Weight, 5½ pounds.

This species inhabits the coast of India, Burma, southeastern Siam, the Malay Peninsula, and southeast through the Philippine and Sunda Islands to Australia. Robinson and Kloss [88] state that it is common on the coast of the Malay Peninsula; Gyldenstolpe [89] observed a pair nesting at Koh Lak, but they were not obtained; Robinson [90] reports it from Koh Samui and Koh Pennan, off Bandon; Robinson and Kloss [91] state that the two immature specimens from Langkawi formerly identified as *leucoryphus* really belong to this species.

This is a fish-eating eagle and does not as a rule wander far from the coast.

ICTHYOPHAGA ICHTHYAETUS ICHTHYAETUS (Horsfield)

Falco ichthyaetus HORSFIELD, Trans. Linn. Soc. London, vol. 13, p. 136, 1821 (Java).

One adult male and one adult female, Bung Borapet, June 21 and June 24, 1932.

Dr. W. L. Abbott collected the following: Two adult males and one adult female, Trang, 1896 (Prahmon, March 8 and April 10; Lay Song Hong, November 8); one adult (unsexed) and one immature (unsexed), Tanjong, Badak, Tenasserim, January 7, 1900, and December 10, 1903; and one adult female, Rumpin River, Pahang, July 21, 1903.

He gives the soft parts as: Iris straw yellow or grayish yellow; cere and base of bill dark leaden, black at tip, or cere and bill dull black, horny blue at base of lower mandible; feet china, dirty, or greenish white, claws black. Weight of three specimens: One adult male from Trang, 3½ pounds; one adult female from Trang, 5 pounds; and one adult female from Pahang, 5 pounds.

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[88] Ibis, 1911, p. 23.

[89] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 128, 1916.

[90] Journ. Federated Malay States Mus., vol. 5, p. 144, 1915.

[91] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 100, 1923.

This species is said to be generally distributed in Siam in suitable localities. As a good part of its food is fish, it is usually found near water.

The form ranges from India through Assam, Burma, French Indo-China, and Siam to the Philippines and the Greater Sunda Islands as far as Celebes.

SARCOGYPS CALVUS (Scopoli)

Vultur calvus Scopoli, Deliciae florae et faunae insubricae, pt. 2, p. 85, 1786 (Pondicherry).

Dr. W. L. Abbott collected one male at Prahmon, Trang, April 4, 1896; and one female, Trang, February 11, 1897.

He gives the soft parts as: Male—iris straw color, finely mottled with black; bill and wattles black; naked head and cere purplish red; feet pale pink flesh color, claws black. Female—Iris dusky brown; bill and claws black; cere, head, and wattles dull red; feet and mottling in front of thighs red. The weight of the male is given as 8 pounds; that of the female as 10 pounds.

The female has the inner secondaries faded to a creamy white subterminally, this white area much frayed and in several of the feathers only a small spatula of the black tip remaining. The male, though taken later in the year, is in unworn and unfaded plumage.

This species ranges throughout India and Burma, east to Siam, and Indo-China, south through Peninsular Siam to the Malay States.

Gyldenstolpe [92] in recording it from Koh Lak states that it is most abundant along the coast but that it occurs also in the central and northern parts of the country; Ogilvie-Grant [93] records it from Patani; Deignan [94] reports it common at Chiengmai; Herbert [95] found it breeding around Bangkok, depositing its single egg by the end of January or early in February.

Apparently this is a common species all over Siam.

PSEUDOGYPS BENGALENSIS (Gmelin)

Vultur bengalensis Gmelin, Systema naturae, vol. 1, pt. 1, p. 245, 1788 (Bengal).

Dr. W. L. Abbott collected one male at Tyching, Trang, April 23, 1896; and one immature female, Lay Song Hong, Trang, no date.

He gives the color of the soft parts as: Male—iris dark brown; head and neck slaty black; bill and cere black, culmen pale greenish horny; feet dull black, claws black. Immature female—iris dark brown; head and neck muddy brown; two patches on lower part of neck behind bluish; cere dull black; lower mandible dull dark horn brown; upper mandible dark brownish black, black at tip, a broad greenish horny patch on culmen; naked patch over each clavicle pale bluish; a spot on lower eyelid pale yellow; feet dark dirty brown, claws dull black. The weight of the male is given as twelve and a half pounds, that of the female as ten pounds.

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[92] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 132, 1916.

[93] Fasciculi Malayenses, pt. 3, p. 115, 1905.

[94] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 164, 1931.

[95] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 329, 1926.

This species ranges from the lower Himalayas from Kashmir to Burma and Indo-China, south to Siam and down Penisular Siam to the Malay States. Gyldenstolpe[96] states that it is fairly common over the whole country, and several nests were observed in some large trees south of Chiengmai; Grant[97] records it from Patani; Robinson and Kloss[98] record it common everywhere. It does not extend south of Taiping, Perak.

CIRCUS MELANOLEUCUS (Forster)

Falco melanoleucus FORSTER, Indian zoology, p. 2, pl. 2, 1769 (Ceylon).

One female, Bangkok, December 30, 1925 (although marked female, most certainly an adult male).

This species breeds from Lake Baikal east to Ussuriland and south to northern China; winters in eastern India, Burma, Siam, Indo-China, the Philippines, and Malay Peninsula.

Gyldenstolpe[99] secured a male and female at Khun Tan and observed it on the grassy plains at Nong Bua and in some numbers on the great swamps of central Siam; Deignan[1] reports that it occurs on the Chiengmai ricefields from October to March; Lowe[2] observed it on the Meping; Robinson and Kloss[3] say that it is common in Peninsular and southwestern Siam but a rare winter visitor to the southern parts of the Peninsula as far as Johore.

CIRCUS AERUGINOSUS AERUGINOSUS (Linnaeus)

Falco aeruginosus LINNAEUS, Systema naturae, ed. 10, p. 91, 1758 (Sweden).

One female, Nong Preng, January 29, 1927.

This form breeds from southern Sweden east to the Yenessei and south to Turkestan and Mongolia; migrates south to winter in India, the Malay Peninsula, southern China, and the Philippines.

Gyldenstolpe[4] reports it from Bangkok and central Siam, and on his second expedition he took four immature specimens at Koh Lak in November and December[5]; de Schauensee[6] took a male at Chiengmai, December 25; Lowe[7] observed it on the Meping in March;

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[96] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 131, 1916.

[97] Fasciculi Malayenses, pt. 3, p. 115, 1905.

[98] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 106, 1923.

[99] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 123, 1916.

[1] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 166, 1931.

[2] Ibis, 1933, p. 485.

[3] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 102, 1923.

[4] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 63, 1913.

[5] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 124, 1916.

[6] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 579, 1930.

[7] Ibis, 1933, p. 485.

Robinson and Kloss[8] found it common in the ricefields bordering the upper reaches of the Pakchan Estuary and say that in winter it is fairly abundant in suitable open spaces as far south as Kuala Lumpur.

SPILORNIS CHEELA MALAYENSIS Swann

Spilornis cheela malayensis SWANN, A synoptical list of the Accipitres, pt. 3, p. 83, 1920 (Raub, Pahang).

One female, Kao Soi Dao, Trang, January 9, 1934; one male, Koh Lak, June 15, 1933.

The following specimens collected by Dr. W. L. Abbott are in the United States National Museum: Three males and three females, Trang (Prahmon, April 2–3, 1896; Tyching, May 26, 1896; Lay Song Hong, August 31 and September 3, 1896; Trang, January 13, 1897); one female, Pulo Terutau, Langkawi Group, November 9, 1903; one male, Endau River, east coast of Johore, June 28, 1901; one immature female, Sungei Balik, Tenasserim, November 29, 1900.

Dr. Abbott's notes follow: Iris bright yellow; bill horny blue at base, tip black; cere and naked skin about lores and orbits bright amber; feet yellow, claws black. Weight of a female taken at Prahmon, Trang, 2 pounds; the stomach of the same bird contained the remains of snakes.

The male taken by Dr. Smith at Koh Lak is considerably paler below than the Trang female that he took. It is molting, and the new feathers coming in are much darker. The paler bird is regarded as an earlier stage of plumage. Two of Dr. Abbott's Trang male specimens are also pale beneath; also the male from Johore.

The wings of four males from Siam measure 400, 355, 392, and 393 mm; the single male from Johore 345 mm; the wings of five females from Siam 390, 395, 405, 370, and 390 mm; the wings of five males from Sumatra measure 325, 330, 341, 350, and 365 mm; three females from Sumatra 340, 360, and 363 mm.

These measurements indicate that the Sumatran bird averages smaller than that of the mainland. It appears to be also slightly paler, but not constantly so. The small male from Johore may really belong with the Sumatran form, and the bird of the southern Malay States may be the same as that of Sumatra. The name of this form as restricted by Oberholser[9] is *Spilornis cheela bassus* (J. R. Forster).

The range of *S. cheela malayensis* extends from southwestern Siam and southern Tenasserim through Peninsular Siam to the Malay States. It has been recorded from the Malay Peninsula under various names such as *Spilornis pallidus*, *bacha*, and *rutherfordi*. The small pale bird from Johore does resemble *S. pallidus*, but this form is confined to the lowlands of west and north Borneo and the Natuna

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[8] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 103, 1923.

[9] U. S. Nat. Mus. Bull. 159, p. 20, 1932.

Islands. So I think it better for the present to consider it a pale specimen of *bassus*. *S. c. malayensis* apparently is not an uncommon bird in suitable localities in Peninsular Siam, extending northward into southwestern Siam, but how far it goes in this direction is not known at present.

Family FALCONIDAE: Falcons, Caracaras

MICROHIERAX FRINGILLARIUS (Drapiez)

Falco fringillarius DRAPIEZ, Dictionnaire classique des sciences naturelles, vol. 6, p. 412, pl. 5, 1824 (Indies; Swann[10] suggests Malacca, but Hartert[11] had previously suggested Sumatra).

One female, Bangnara, Peninsular Siam, July 7, 1926.

The following specimens collected by Dr. W. L. Abbott are in the United States National Museum: Three males and one female, Trang, May 24, July 20, and December 17, 1896, and January 3, 1899; one male, Singapore, May 26, 1899; one male and one female, Endau River, east coast of Johore, June 27, 1901; one male, Telok Besar, Tenasserim, February 28, 1904. He gives the color of the soft parts as: Iris dark brown; bill, cere, feet, and claws black.

Robinson and Kloss[12] report this as one of the commonest falcons in Peninsular Siam; Gairdner[13] reports it from as far north as Ratburi and Petchaburi. It ranges from southern Tenasserim through Peninsular Siam and the Malay States to Sumatra, Java, and Borneo.

A comparison of nine males from the Malay Peninsula, eight from Sumatra, and a pair from Borneo shows no constant differences.

Five males from the Malay Peninsula and one from Tenasserim measure: Wing, 91–103 (96); tail, 50–55 (51.9); culmen, 9–10 (9.7) mm.

Four males from Sumatra: Wing, 91.5–102 (96.2); tail, 50–53.5 (51.6); culmen, 9.5–10 (9.7) mm.

One male from Java: Wing, 89; tail, 49; culmen, 9.5 mm.

One male from Borneo: Wing, 92; tail, 51; culmen, 10 mm.

Three females from the Malay Peninsula: Wing, 100–104.5 (102.5); tail, 56.5–57 (56.3); culmen, 11 mm.

Four females from Sumatra: Wing, 100–105 (102); tail, 51.5–60.5 (56.5); culmen, 10.5–11 (10.9) mm.

One female from Borneo: Wing, 93; tail, 53; culmen, 11 mm.

MICROHIERAX CAERULESCENS BURMANICUS Swann

Microhierax caerulescens burmanicus SWANN, A synoptical list of the Accipitres pt. 4, p. 116, 1920 (Thayetmyo, Burma).

One female, Pak Chong, February 4, 1925; one male, Ban Sadet, Sriracha, May 27, 1925; two males, Bo Ploi, Kanburi, September 26,

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[10] A synopsis of the Accipitres, ed. 2, p. 181, 1922.

[11] Nov. Zool., vol. 9, p. 541, 1902.

[12] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 92, 1922.

[13] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 151, 1915.

1925; one male and one female, Mekhan, February 6 and 7, 1932; one male, Doi Bata, December 25, 1932; one male, Mae Hong Sorn, January 7, 1933; one male, Muek Lek, April 26, 1933.

Gyldenstolpe[14] reports this falconet rather common in northern and northwestern Siam and apparently rarer in eastern Siam; Deignan[15] reports it common on Doi Sutep to 3,000 feet, more rarely to 5,500 feet, and widely distributed on the plain at Chiengmai in winter; Chasen and Kloss[16] report it from the Raheng District, western Siam; de Schauensee[17] saw several birds entering holes at Chiengdao, January 8; three were shot and they were all adult females.

Three of the females reported upon by Chasen and Kloss from the Raheng District are in the United States National Museum. One of the females has the forehead, superciliaries, and a small patch below the eye rufous; the throat is pure white; an immature plumage. The form is not uncommon evidently over all Siam proper. It ranges from Burma and the Shan States south to northern Tenasserim, Siam, and Indo-China.

NEOHIERAX INSIGNIS CINEREICEPS (Baker)

Polihierax insignis cinereiceps Stuart Baker, Bull. Brit. Orn. Club, vol. 47, p. 101, 1927 (Myawadi, Tenasserim).

Two females, Doi Angka, December 2, 1928.

Gyldenstolpe[18] reports this hawk taken in northern, southeastern, and eastern Siam; Chasen and Kloss[19] report it from Raheng District, western Siam; Deignan[20] states that it is uncommon on the lowest slopes of Doi Sutep from October to January and common at all seasons in the barrens near Chawmtawng, to the south of Chiengmai; Lowe[21] found a pair nesting 58 miles east of Umpang, February 17.

The United States National Museum received a pair of these hawks from the Raffles Museum from the Raheng collection reported upon by Chasen and Kloss. The female is in very worn plumage; the male is a bird of the year, with the nesoptiles still adhering to the feathers of the back. The male has a white collar and the lower parts pure white with no streaks at all, even on the flanks. This does not agree with Baker's[22] description of the immature of the species.

The two females from Doi Angka are very dark gray above, the head and hindneck russet with fine blackish shaft streaks. The female from Raheng is similar in the color of the back, but the color of the head is lighter. It is somewhat faded, as the bird is in very worn plumage. These northern and western records may belong to *Neohierax insignis insignis*.

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[14] Ibis, 1920, 749.

[15] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 165, 1931.

[16] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 162, 1928.

[17] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 269, 1934.

[18] Ibis, 1920, p. 749.

[19] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 161, 1928.

[20] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 165, 1931.

[21] Ibis, 1933, p. 484.

[22] The fauna of British India, Birds, ed. 2, vol. 5, p. 57, 1928.

N. i. cinereiceps is resident from Tenasserim to Siam and Indo-China.

FALCO SEVERUS SEVERUS Horsfield

Falco severus Horsfield, Trans. Linn. Soc. London, vol. 13, p. 135, 1821 (Java).

One adult male, Pran, April 1, 1931.

The only specimens with which I have been able to compare the above specimen are two males and a female from the Philippines and a male from Cochinchina. The latter is immature and may be disregarded. The Philippine specimens are darker above and below than the Siamese male, and in all three of the Philippine birds the throats are washed with orange-cinnamon, while in the Siamese bird this region is pure white. There is little or no difference in size, however.

Gyldenstolpe [23] says that this falcon is extremely rare in Siam and hitherto recorded only from Bangkok and Koh Lak; Deignan [24] found it on Doi Sutep at 1,800 feet in June; de Schauensee [25] took a pair at Nakon Nayok, November 17, and a male at Chiengmai, December 23. There are apparently no records, however, for Peninsular Siam, where it will eventually be found. It has a rather wide range, occurring from Assam, Tenasserim, and Siam to Indo-China, Java, and the Philippines.

CERCHNEIS TINNUNCULUS SATURATUS (Blyth)

Tinnunculus saturatus Blyth, Journ. Asiat. Soc. Bengal, vol. 28, p. 277, 1859 (Tenasserim).

Two females, Bangkok, December 17 and February 19, 1923.

The February specimen is lighter than the December one, but it is more worn and faded.

Dr. W. L. Abbott took an adult female at Kantany, Trang, January 17, 1897.

This race is a winter visitor to Siam, where it has been recorded from Trang, Langkawi, and Koh Lak; Deignan [26] says that this bird is uncommon at Chiengmai from October to February, ascending the mountain (Doi Sutep) to 3,500 feet. It breeds from Yunnan and the hills of eastern and central Burma to Tenasserim.[27]

It may eventually be found breeding in northern Siam.

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[23] Ibis, 1920, p. 749.

[24] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 165, 1931.

[25] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 269, 1934.

[26] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 165, 1931.

[27] Peters, Check-list of birds of the world, vol. 1, p. 299, 1931.

Family PHASIANIDAE: Quails, Pheasants, Peacocks

FRANCOLINUS PINTADEANUS PHAYREI (Blyth)

Perdix phayrei BLYTH, Journ. Asiat. Soc. Bengal, vol. 12, p. 101, 1843 (Arracan).

One female, Pak Chong, April 28, 1926; one female, Wang Kien, Kanburi, March 12, 1934; two males, Vichienburi, Pasak River, February 26, 1934.

This form ranges from Arracan, Pegu, and Manipur to eastern Burma, Siam proper, Tonkin, Annam, Cochinchina, lower Laos, Cambodia, and Hainan. Gyldenstolpe [28] says it occurs throughout Siam though locally distributed and nowhere common; Deignan [29] reports it uncommon at Chiengmai on the plain and on the lower slopes of Doi Sutep, once as high as 4,600 feet; de Schauensee [30] took specimens at Chiengmai, Bua Yoi, and Sriracha; Gairdner [31] records it for Ratburi and Petchaburi, but Robinson and Kloss [32] are rather skeptical of its occurrence so far south in this direction; Chasen and Kloss [33] record it from the Raheng district, western Siam, and one of the specimens was sent to the United States National Museum. A female also was received from C. Boden Kloss, collected at Lat Bua Kao, eastern Siam.

A larger form, *Francolinus pintadeanus pintadeanus* (Scopoli), occurs in southern China.

RHIZOTHERA LONGIROSTRIS LONGIROSTRIS (Temminck)

Perdix longirostris TEMMINCK, Histoire naturelle générale des pigeons et des gallinacés, vol. 3, pp. 323, 721, 1815 (Sumatra).

Dr. W. L. Abbott took an adult male of this bird at the Endau River, east coast of Johore, July 15, 1901.

He gives the soft parts as: Iris brown; eyelid reddish brown; bill black; feet pale yellowish, claws horny yellow.

The form ranges from Sumatra and the Malay States northward through Peninsular Siam to southern Tenasserim and southwestern Siam, Sumatra, and western Borneo.

Herbert [34] was the first to record this bird from Siam, but he gave no definite locality; later Stuart Baker [35] examined the specimen and gave the locality as Klong Ban Lai; Robinson and Kloss [36] secured a female at Tapli, Pakchan Estuary, and say that it is the second record for Siam; de Schauensee [37] secured a male at Rajburi, which extends the range considerably to the northward. This makes only three records for Siam, but it is probably commoner than the records indicate, especially in the southern part of the Peninsula.

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[28] Ibis, 1920, p. 735.

[29] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 168, 1931.

[30] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 276, 1934.

[31] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 151, 1915.

[32] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 17, 1921.

[33] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 153, 1928.

[34] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 58, 1916.

[35] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 35, 1920.

[36] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 17, 1921.

[37] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 276, 1934.

A related form, *Rhizothera longirostris dulitensis* Ogilvie-Grant, occurs in northern Borneo.

MELANOPERDIX NIGRA NIGRA (Vigors)

Cryptonyx niger VIGORS, Zool. Journ., vol. 4, p. 349, 1829 (Sumatra).

Dr. W. L. Abbott collected an adult male at the Endau River, east coast of Johore, June 25, 1901, and another adult male at the Rumpin River, Pahang, June 24, 1902. "Bill black; iris deep brownish red."

These two males are the only specimens from the Malay Peninsula in the United States National Museum, but it has a fair series from Borneo and Sumatra. Birds from Borneo have been named *Melanoperdix nigra borneensis*, by Rothschild,[38] but Robinson and Kloss [39] have questioned their distinctness. After examining a series of nine males from Sumatra, the two males from the Malay Peninsula, and five males from Borneo, I fail to see any constant differences in this sex. The lighter and somewhat more slaty edges to the feathers of the upper side, spoken of by Lord Rothschild as one of the distinguishing characters of *borneensis*, are, in my opinion, due to age, as two of the males in the Bornean series are slightly immature and lack this feature, while some males in the Sumatran series have it and in some these lighter edges are much reduced.

Five females from Sumatra compared with four females from Borneo appear to be darker above and below, especially on the belly, and the form is worthy of recognition on the differences in this sex.

There appears to be little or no difference in size between the two series.

Nine males from Sumatra measure: Wing, 131–143 (137); tail, 60–70 (64); culmen, 18.5–21 (19.9); depth of upper mandible at base, 9.5–10.5 (10) mm.

Five males from Borneo: Wing, 132.5–143 (137.3); tail, 59–64 (62.6); culmen, 18.5–21 (19.7); depth of upper mandible at base, 10–10.5 (10.2) mm.

The two males from the Malay Peninsula: Wing, 137–140; tail, 60–60; culmen, 21–21.5; depth of upper mandible at base, 10–11 mm.

Five females from Sumatra: Wing, 135–143 (139.5); tail, 59.5–67 (62.6); culmen, 18–20 (18.9); depth of upper mandible at base, 10–10.5 (10.2) mm.

Four females from Borneo: Wing, 131–144 (137.4); tail, 58–65 (62); culmen, 18.5–20 (19); depth of bill at base, 10–10.5 (10) mm.

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[38] Bull. Brit. Orn. Club, vol. 38, p. 3, 1917.

[39] Ibis, 1918, p. 592.

Apparently there are no records of *Melanoperdix nigra nigra* from Siamese territory. Ogilvie-Grant [40] records it from as far north as the Province of Wellesley, and Robinson [41] gives the range as the latitude of Penang southward through the Malay Peninsula to Sumatra. It is a lowland bird and will probably eventually be taken in southern Peninsular Siam. As mentioned above, a closely related form occurs in Borneo.

EXCALFACTORIA CHINENSIS CHINENSIS (Linnaeus)

Tetrao chinensis Linnaeus, Systema naturae, ed. 12, p. 277, 1766 (China and the Philippines; Nanking, China).

One female, Bangnara, Patani, May 23, 1924.

Dr. W. L. Abbott took an adult male at the Packa River, Trengganu, September 26, 1900.

The form ranges from India east to southeastern China, south to Tonkin, Annam, Siam, and Peninsular Siam to the Malay States, Formosa, Hainan, and Ceylon.

Deignan [42] had only one record for Chiengmai, in February; Herbert's [43] collector found a nest and four incubated eggs at Samkok (near Bangkok), July 17, and trapped the male and female; Robinson and Kloss [44] report that it occurs in Peninsular and southwestern Siam in suitable localities, especially between Patani and Singora.

The size and secretive habits of the birds probably account for the meager records; it is probably much more plentiful than appearances indicate.

The species is divided into a number of forms, ranging from India to Australia.

ARBOROPHILA RUFOGULARIS TICKELLI (Hume)

Arboricola tickelli Hume, The game birds of India, Burmah, and Ceylon, vol. 2, p. 77, 1880 (Muleyit).

One male, Doi Angka, 8,000 feet, December 6, 1928; one male, Doi Sutep, 5,600 feet, December 15, 1928; four males and two females, Doi Nangka, April 24 and 27, 1931; one male and one female, Pang Meton (Doi Nangka), May 5, 1931; one male, Doi Hua Mot, August 17, 1934.

The last-mentioned specimen is an immature, much smaller than the remainder of the series and differently marked. The chest is spotted sparingly with small white spots; the throat is more heavily spotted; the spots on the jugulum heavy and almost forming a bar below the rufous of the throat; black spots in the wing larger, the rufous almost lacking, and large buffy patches appear; less white on the abdomen; wing, 128 mm.

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[40] Catalogue of the birds in the British Museum, vol. 22, p. 228, 1893.

[41] Journ. Federated Malay States Mus., vol. 1, no. 4, p. 127, 1906.

[42] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 168, 1931.

[43] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 336, 1926.

[44] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 19, 1921.

This form ranges from Tenasserim and southern Shan States to northern Siam and southwestern Laos.

Deignan[45] reports it as occurring on Doi Sutep from 4,400 feet to the summit; de Schauensee[46] took a series there on his third trip to Siam.

The species has been divided into six related forms, occurring from northern India to the mountains of southern Annam.

ARBOROPHILA BRUNNEOPECTUS BRUNNEOPECTUS (Blyth)

Arboricola brunneopectus Blyth (Tickell MS.), Journ. Asiat. Soc. Bengal, vol. 24, p. 276, 1855 (Tenasserim).

One male, Khun Tan, 4,000 feet, February 17, 1932; one male, Doi Hua Mot, August 26, 1934.

This form occurs from Pegu and eastern Burma to Yunnan, northern and western Siam.

Williamson[47] reports it from Sai Yok, and Chasen and Kloss[48] record it from the Raheng district, western Siam, and three specimens from their collection were received by the United States National Museum; de Schauensee[49] took a male at Chiengsen, and on his third trip[50] he collected a series at Chiengmai and Chiengdao; Deignan[51] says it is common on Doi Sutep above 4,600 feet; Gyldenstolpe[52] gives the additional record of Doi Vieng Par.

Two closely related forms are found in Indo-China.

ARBOROPHILA CAMBODIANA DIVERSA Riley

Arborophila diversa Riley, Proc. Biol. Soc. Washington, vol. 43, p. 189, 1930 (Kao Sabab, Chantabun, southeastern Siam).

Two males and three females, Kao Sabap, 3,000 feet, January 8, 1930, November 21, 1933.

When this bird was described, only the description of *Arborophila cambodiana* Delacour and Jabouille was before me, and I did not realize that it was as distinct as it really is. Soon after the description came out, M. Delacour kindly sent me an advance copy of the plate afterwards published.[53] From this plate there are certain differences apparent that were not emphasized in the original description. The plate of *A. cambodiana* shows the feathers of the lower throat only narrowly bordered with black, the basal color predominating, whereas in *A. diversa* the lower throat is black, the basal color hardly showing or not at all. The color of the chest and breast is quite different. In *diversa* the chest is russet, while in *cambodiana* it is more of a hazel; the breast feathers of the latter are described as tipped with chestnut, while in the former they are tipped with hair brown. The back is more heavily barred with black in *cambodiana.* Briefly, while these two forms are similar in color pattern, they differ widely in detail, but as they evidently represent each other in separate mountain areas, it is probably best to treat them as races. *A. diversa* came from an isolated mountain range where little or no collecting had been done prior to Dr. Smith's visits.

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[45] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 168, 1931.

[46] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 275, 1934.

[47] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 32, 1918.

[48] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 154, 1928.

[49] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 582, 1930.

[50] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 275, 1934.

[51] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 168, 1931.

[52] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 156, 1916.

[53] Oiseaux l'Indochine Française, vol. 1, pl. 13, 1931.

Briefly, the two subspecies may be summarized as follows:

Lower throat black; chest russet; back with narrow black bars	diversa
Lower throat hazel with only narrow black edges to the feathers; chest hazel; back with broad black bars	cambodiana

The form was founded upon a single male. Dr. Smith paid a second visit to the mountain about three years later and secured four specimens. The second male resembles the type, except that the throat is not so extensively black and the pileum and nape are rather heavily spotted with black. The females do not differ materially from the males, except that the black is more restricted on the lower throat, the pileum more heavily spotted with black, the forehead more of a cinnamon-brown, and the chest is a little deeper russet.

No two of the females are alike. In one, the black on the pileum predominates over the basic color and the black bars on the upperparts are more pronounced than in the males. The black barring on the upperparts in the other two females is more like that of the males. In another (no. 333610) the russet of the chest is deep and pronounced, almost hazel; the tawny of the chin extends down and includes the throat, the black restricted to the lower throat or jugulum.

The two males measure: Wing, 141–143; tail, 59–61; culmen, 20–20 mm. The three females: Wing, 130–132 (131.3); tail, 54–56 (54.7); culmen, 18.5–19 (18.8) mm.

The range of the present form is the isolated mountain range in southeastern Siam, extending into Cambodia.

The related form, *Arborophila cambodiana cambodiana* Delacour and Jabouille, is known only from the region around Bokor, southern Cambodia.

TROPICOPERDIX CHARLTONI CHARLTONI (Eyton)

Perdix charltoni Eyton, Ann. Mag. Nat. Hist., ser. 1, vol. 16, p. 230, 1845 (Malacca).

One male, Sichol, Bandon, September 5, 1929; two males, Kao Soi Dao, Trang, January 19 and 26, 1934.

Dr. W. L. Abbott collected six males and two females in Trang (Lay Song Hong, December 3, 1896; near Kao Nok Ram, January 2–4, 1899; Trang, February 22–25, 1899). He describes the soft parts as:

Iris dark brown; bill dark horn brown, greenish beneath at the tip, dull red at base; orbital skin dull red; feet greenish yellow or pale green. The male from Sichol has the chestnut chest band reduced and lighter in color and the back lighter. There are some other slight differences when compared with Trang females, but these may be individual.

This form occurs from the lower part of the Malay Peninsula north through Peninsular Siam to southern Tenasserim. It has been collected from as far north as Maprit and Klong Bang Lai in southwestern Siam.[54]

One female from Borneo is much darker above and below, with fewer spots on the throat, than any mainland specimen examined by me and represents the race *Tropicoperdix charltoni graydoni* (Sharpe and Chubb).

A related form, *Tropicoperdix charltoni tonkinensis* Delacour, occurs in northeastern Tonkin and North Annam.

TROPICOPERDIX CHLOROPUS OLIVACEA Delacour and Jabouille

Tropicoperdix chloropus olivacea Delacour and Jabouille, Bull. Brit. Orn. Club, vol. 48, p. 129, 1928 (Napé, Laos).

One male and one female, Khun Tan, September 1, 1930, February 18, 1932; one male, Melang Valley, December 31, 1932; one adult male and one immature male, Hin Lap, December 9, 1931; one female, Kao Lem, December 29, 1930; one female, Nong Khor, February 12, 1927; one male, Kao Bantad, Krat, December 22, 1929; five males and two females, Kao Sabap, November 8–21, 1933; one male and one female, Lamton Lang, May 27, 28, 1934. Dr. Smith took three eggs at Muek Lek, April 26, 1933, apparently belonging to this form. They are rounded-ovate, olive-buff, and measure 36 by 29.4, 36 by 28.7, and 35.4 by 29.4 mm.

The above series of skins agrees fairly well with a topotypical male of the form.

De Schauensee[55] took three specimens at Chiengsen; and on his third trip to the country he collected a pair at Chantabun; he also assigns a male from Chiengmai, 4,500 feet, to *T. c. chloropus*[56] but the three specimens from northern Siam (Khun Tan and Melong Valley) in Dr. Smith's series do not differ appreciably from southeastern Siam specimens, and it is my opinion that *T. c. chloropus* is confined to the western and southwestern part of the country, as far as Siam is concerned.

T. c. olivacea apparently ranges from northern and southeastern Siam to Cambodia and Laos.

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[54] Baker, Journ. Nat. Hist. Soc. Siam, vol. 4, p. 35, 1920.

[55] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 583, 1930.

[56] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 576, 1934.

A related race, *Tropicoperdix chloropus cognacqi* Delacour and Jabouille, occurs in Cochinchina and southern Laos. These authors [57] also state that it occurs in southeastern Siam, but I know of no specimens from there. Two other forms of the species occur in French Indo-China.

CALOPERDIX OCULEA OCULEA (Temminck)

Perdix oculea Temminck, Histoire naturelle générale des pigeons et des gallinacés, vol. 3, pp. 408, 732, 1815 (India; restricted by Robinson and Kloss to central Malay Peninsula [58]).

Four males, Tha Lo, Bandon, September 16–20, 1931.

Dr. W. L. Abbott collected a male at Lay Song Hong, Trang, October 11, 1896. He describes the soft parts as follows: Bill black, extreme tip pale brown; feet pale green, claws pale brown.

This is a southern form confined to the Malay Peninsula from Pahang north to southwestern Siam. Gairdner [59] reports it from the Petchaburi District, which must be about its northern limit in Siam.

One of Dr. Smith's males collected September 16 is a bird of the year about half the size of the adult. It is in a plumage almost identical to that of the adult, except for a few minor details.

ROLLULUS ROULROUL (Scopoli)

Phasianus roulroul Scopoli, Deliciae florae et faunae insubricae, pt. 2, p. 93, 1786 (Malacca).

Three males and two females, Kao Soi Dao, Trang, January 24, 1934.

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula: Six males and three females, Trang (Lay Song Hong, August 21–November 27, 1896; near Kao Nok Ram, January 6, 1899); one female, Endau River, east coast of Johore, July 16, 1901; and one male, Rumpin River, Pahang, June 12, 1902.

Dr. Abbott gives the following notes on the soft parts: Bill black, deep red at base; naked orbital skin vermilion; feet deep red, claws horn brown; iris brown.

One male from Lay Song Hong, Trang, collected September 6 (no. 160099) is a bird of the year almost adult. It has already acquired a plumage similar to the adult, except for the forehead and lower parts; the latter has some mouse-gray feathers down the center of the body from the chin to the vent mixed with the black, some of these tipped with green; forehead deep mouse-gray to the posterior border of the eye, only blackish around the base of the bill, no white on the crown; red crest much shorter than in the adult. The long, black, hairlike feathers springing from the forehead have appeared.

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[57] Oiseaux l'Indochine Française, vol. 1, p. 274, 1931.

[58] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 18, 1921.

[59] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 151, 1915.

The interesting thing about this specimen is that the immature at one stage of its plumage has the breast mouse-gray with a greenish wash. At this stage the sexes are probably alike.

The range of the species extends from southern Tenasserim south through Peninsular Siam to the Malay States, Sumatra, Banka, Billiton, and Borneo. Robinson and Kloss[60] record it from Tang Pran, Takuatung and Tasan, Pakchan Estuary; Gairdner[61] records it from Ratburi and Petchaburi, which must be its northern limit, or very near it, in Siam.

The species is said to be confined to dense evergreen forests and to be commoner in the south than in the north of the Malay Peninsula. It is hard to observe but easy to trap.

GENNAEUS LINEATUS LINEATUS (Vigors)

Phasianus lineatus Vigors, Proc. Zool. Soc. London, p. 24, 1831 (Straits of Malacca, error).

One male and one female, Sam Roi Yot, November 12, 1932.

I have no comparable material of this species. The above male has the white streaks below confined to the sides of the chest. Gairdner[62] reports this pheasant from Ratburi, where he took a set of eight eggs, April 3; Gyldenstolpe[63] took a male at Hat Sanuk and states it was not uncommon there; Stuart Baker[64] assigns specimens from the Meping Rapids between Chiengmai and Raheng and from near Raheng to this form; Chasen and Kloss[65] also refer Raheng specimens to this form; Lowe[66] records it from the Um Pang District, Siam, and the Taok Plateau, Tenasserim; Herbert[67] under the name *G. l. sharpei* describes three eggs taken by K. G. Gairdner in the Ratburi district, western Siam, May 2. Oates[68] says this is a form of low elevations, ranging to not over 2,000 feet.

Its entire range is too intricate to be given here. It is found in Tenasserim as far north as the southern Shan States and in southwestern and western Siam, but just where it meets the next form is not known.

GENNAEUS LINEATUS SHARPEI Oates

Gennaeus sharpei Oates, A manual of the game birds of India, vol. 1, p. 357, 1898 (Dargwin, 2,500 feet; Kollidoo, 3,500 feet; and Karen Hills, east of Toungoo, Burma).

One male, Meserieng, January 20, 1933.

Dr. Smith notes the following colors of the soft parts: "Bill horn color; face red; lower lid horn color; iris hazel; feet sepia."

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[60] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 19, 1921.

[61] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 151, 1915.

[62] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 40, 1914.

[63] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 156, 1916.

[64] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 47, 1920.

[65] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 154, 1928.

[66] Ibis, 1933, p. 488.

[67] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 336, 1926.

[68] A manual of the game birds of India, pt. 1, p. 353, 1898.

The above specimen differs as follows from the male assigned to *G. lineatus lineatus:* The chest feathers have fine white shaft streaks; the white streaks on the sides of chest are broader and extend down on to the flanks; above, the fine white lines appear to be somewhat finer; the unspotted inner web and tip of the middle tail feathers are avellaneous, not white; the crest is greenish at tip instead of steely blue.

Gyldenstolpe [69] says that authentic specimens have hitherto been collected only in the Meh Taw forest. Oates, in the description of this form, says that while the ranges of this and *G. l. lineatus* approach each other very closely, *sharpei* occurs at higher elevations. Stuart Baker [70] gives the range as the South Shan States, East Central Burma, and Siam.

GENNAEUS LEWISI Delacour and Jabouille

Gennaeus lewisi Delacour and Jabouille, Bull. Brit. Orn. Club, vol. 48, p. 125, 1928 (Bokor, south Cambodia).—Delacour, Ibis, 1929, p. 202, pl. 5.

One male, Kao Kuap, Krat, December 25, 1929; one male and one female, Kao Sabap, 3,000 feet, November 13 and 17, 1933.

This species finds its nearest ally in *Gennaeus annamensis* Grant, from south Annam, but the pattern of the back is coarser in *lewisi*, both the black and white concentric marks to the feathers are broader. To accommodate this larger pattern the number of white lines on each feather is reduced in *lewisi*, and the feathers appear to be larger. Below, in *Gennaeus annamensis*, the lanceolate feathers on the sides of the neck and chest are either white or white on the inner web, becoming rather broad white shaft streaks on the flanks; this forms a rather broad white line on each side of the black jugulum and chest. In *G. lewisi* the feathers of the sides of the neck and chest are black with narrow white concentric lines, and the flanks have merely white hair lines along the shafts; in other words, there is no broad white line down the sides to contrast with the black jugulum and chest.

The female *G. lewisi* differs widely from the same sex of *G. annamensis*. The back in the latter is a snuff brown; the scapulars have very fine dusky stippling; the wing coverts are the color of the back; the tail has wavy lines of a lighter color than the basic color and with some dusky markings; below it is a buffy brown with lighter brownish shafts to the feathers. In the female of *G. lewisi* the back is chestnut-brown, each feather tipped with light grayish olive and the shaft whitish; wing coverts of the closed wing light grayish olive, with white shafts contrasting with the reddish-brown flight feathers; tail roods brown without markings; lower parts drab with whitish shaft streaks. The figure of the female of *G. lewisi* in Delacour and Jabouille [71] is much too red and does not show the contrast between the wing coverts and the flight feathers. There may, however, be considerable variation in the females.

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[69] Ibis, 1920, p. 738.

[70] The fauna of British India, Birds, ed. 2, vol. 5, p. 331, 1928.

[71] Oiseaux l'Indochine Française, vol. 1, pl. 8, 1931.

The male taken on Kao Kuap was recorded by me.[72] The two from Kao Sabap add an additional locality in Siam, though not far off. The white concentric lines to the feathers above in the Kao Kuap male are somewhat coarser than in the male from Kao Sabap.

The range of *G. lewisi* extends from the mountains of southern Cambodia to southeastern Siam.

GENNAEUS NYCTHEMERUS RIPPONI Sharpe

Gennaeus ripponi SHARPE, Bull. Brit. Orn. Club, vol. 13, p. 29, 1902 (Southern Shan Hills, Burma).

One male and one female, Doi Nangka, April 26, 1931; two females, Khun Tan Mountains, 3,000 feet, May 15, 1931.

The above male agrees with a male from east of Phong Saly, Laos, that I had previously identified as *andersoni*, but Stuart Baker [73] claims the latter is a hybrid *Gennaeus lineatus sharpii*. The Laos male does not exactly agree with the plate of the type of *Euplocamus andersoni* Elliot [74] in detail, but it is close.

The two females from the Khun Tan Mountains are somewhat different from the Doi Nangka female. The black on the crest tip in the latter comes much farther forward (about even with the eyes) and the upperparts are considerably lighter. Whether these differences are due to individual variation I cannot determine with the material on hand. All the females have bare incubation patches.

Gyldenstolpe [75] saw one on Doi Par Sakerg that he provisionally assigned to this form, but took no specimens; Stuart Baker [76] assigned specimens in the Herbert collection from Muek Lek and Pak Chong, eastern Siam to this form; Deignan [77] found a silver pheasant common on Doi Sutep from 4,500 feet to the summit; Aagard [78] afterwards took a pair on this mountain at 4,600 feet; and de Schauensee [79] recently took a small series at Chiengdao and Chiengmai.

This form extends from the southern Shan States, Burma, to Yunnan, northern and eastern Siam, northern Laos, and northern Annam.

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[72] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 154, 1933.

[73] The fauna of British India, Birds, ed. 2, vol. 7, p. 454, 1930.

[74] Anderson, Anatomical and zoological researches: Comprising an account of the zoological results of two expeditions to western Yunnan, pl. 53, 1879.

[75] Kungl. Svenska Vet.-Akad., vol. 56, no. 2, p. 157, 1916.

[76] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 33, 1920.

[77] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 168, 1931.

[78] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 232, 1932.

[79] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 274, 1934.

HOUPPIFER ERYTHROPHTHALMUS (Raffles)

Phasianus erythrophthalmus Raffles, Trans. Linn. Soc. London, vol. 13, p. 321, 1822 (Sumatra).

Dr. W. L. Abbott collected two males and two females at the Rumpin River, Pahang, June 25–July 6, 1902. He describes the soft parts in the male as follows: Naked skin on side of head red; bill greenish horny, pale brownish at tip; dark brown over nostrils; feet pale leaden, claws pale brown. Weight, 2½ pounds in one male.

The males in this species are bluish black, vermiculated with white on the upper parts; the rump maroon, the tail cinnamon. The female is plain black, including the tail. The two Malay males when compared with six males from Sumatra are more finely vermiculated with white above. In Borneo a related species occurs, *Houppifer pyronotus*, of which the male differs from the above in having the chest with white shaft streaks and the female purplish black.

Robinson [80] gives the range as throughout the Malay Peninsula south of Kedah to Sumatra. So far as I am aware, *Houppifer erythrophthalmus* has not been recorded from Peninsular Siam, but it probably occurs in the southern part.

LOPHURA RUFA (Raffles)

Phasianus rufus Raffles, Trans. Linn. Soc. London, vol. 13, p. 321, 1822 (Sumatra).

One male, Sichol, Bandon, May 25, 1930.

Dr. W. L. Abbott secured four males and one female in Trang (Lay Song Hong, November 22 and December 8, 1896; near Kao Nok Ram, January 5, 1899; Trang, January 27 and 29, 1897); four males, Tenasserim (Telok Besar, February 27–March 21, 1904).

Dr. Abbott gives the color of the soft parts in the male as: Iris red; bill greenish horny (jade color), nostrils dark; naked parts of head smaltz blue; feet red; spurs horny white. He gives the weight of two Trang males as 4 and 4½ pounds; of three Tenasserim males, 4¾, 5¼, and 5½ pounds. This seems to indicate that northern birds are larger.

Robinson and Kloss [81] record it from Nong Kok, Ghirbi, and Tasan, Chumpon [82]; de Schauensee [83] collected a pair at Nakon Sritamarat.

The species ranges from southern Tenasserim south through Peninsular Siam to the Malay States and Sumatra, except the southern part. Tasan seems to be about as far north as it goes in Peninsular Siam.

This is a bird of the dense lowland evergreen forests and is rarely seen; very little seems to be known of its habits.

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[80] Journ. Federated Malay States Mus., vol. 1, no. 4, p. 128, 1906.

[81] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 89, 1919.

[82] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 19, 1921.

[83] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 274, 1934.

One male from Trang (no. 160092) has the shaft stripes on the flanks partly deep buff and partly white; so the deep buff of these stripes mentioned by Robinson and Kloss [82] in the immature is probably due to age. One male (no. 169689) collected by Dr. Abbott in Trang, January 5, has the flank shaft stripes much reduced in width until they are not much more than hair lines.

Dr. Smith's Sichol male specimen has the white flank markings broad and distinct and extending in a line across the chest; the chest feathers are stippled with white; the crest is short.

DIARDIGALLUS DIARDI (Bonaparte)

Euplocomus diardi BONAPARTE, Comptes Rendus Acad. Sci. Paris, vol. 43, p. 415, 1856 (no locality given; Cochinchina).

Five males, Pak Chong, February 18, 1924, May 15, 1925, November 27, 1929, and June 22, 1934; one male and one female, Sikeu, near Korat, February 21, 1926; one male, Tha Chang, March 21, 1927; one female, Lat Bua Kao, July 31, 1929; one female, Hin Lap, December 9, 1931; two males, Muek Lek, April 23, 1933; one male, and two females, Nong Khor, November 18, 1924, and February 7, 11, 1927.

Dr. Smith gives the color of the soft parts as: Male—iris red; legs red; female—iris dull red-brown; bill black; legs red.

Four eggs were collected at Lamton Lang, Pak Chong, May 25, 1934, and one at Pak Chong, June 22, 1934. They are rounded-ovate, pale ochraceous-buff, and measure 48.4 by 40.7, 48.8 by 39.8, 48.2 by 40.2, 48.4 by 39.8, and 47.9 by 39.6 mm.

This species ranges from southern Annam, Cochinchina, Cambodia, and southern Laos to Siam and the Shan States, Burma.

Gyldenstolpe [84] records it from the Meh Lem River, northern Siam; Herbert [85] records one set of eight eggs taken April 19 and a partial set of two eggs taken May 2 by his collector at Muek Lek.

All Dr. Smith's specimens are from the eastern or the southeastern part of Siam, and all the records for the country seen by me, except that of Count Gyldenstolpe, are from this region. It must be rare in the north.

GALLUS GALLUS GALLUS (Linnaeus)

Phasianus gallus LINNAEUS, Systema naturae, ed. 10, p. 253, 1758 (Pulo Condore, mouth of Mekong).

Gallus gallus robinsoni ROTHSCHILD, Nov. Zool., vol. 33, p. 206, 1926 (new name for *Gallus gallus* Grant, nec Linnaeus) (Sumatra).

One male and one female, Bangnara, Patani, May 20 and 21, 1924; one male, Kao Soi Dao, Trang, January 19, 1934; one female, Patalung, July 9, 1929; one male, Huey Yang, Kao Luang, October 9, 1930; one male, Kanburi, April 10, 1928; one male, Tha Chang, January 1,

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[84] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 67, 1913.

[85] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, 1926, p. 335.

1931; two males and one female, Sam Roi Yot, November 9, 13, 1932; one male, Khonka Valley, January 26, 1933; two eggs, Ban Sadet, June 2, 1895.

Dr. W. L. Abbott collected the following: Four males and two females, Trang (Lay Song Hong, November 30, December 28, 1896); three males, Tenasserim (Bok Pyin, February 16, 1900; Champang, December 13, 1903; and Telok Besar, February 28, 1904). He describes the soft parts as follows: Male—iris orange-red; upper mandible dark horn brown, lower mandible whitish horny, whole bill pale brown at base; feet dark slaty, claws dark leaden; weight of two males, 2 and 2¼ pounds.

The following specimens from Siam are also in the United States National Museum: One male and one female, Koh Lak, November 13, 1916; one male Koh Mesan, off Cape Liant, November 1, 1916; one female, Klong Mennam, January 11, 1915.

This race of the jungle fowl ranges from the Malay States north through Peninsular Siam to Burma, Siam proper, Yunnan, Cambodia, southern Laos, southern Annam, Cochinchina, Sumatra, the Philippines, and Celebes. In suitable locations it is fairly well distributed all over Siam and the islands off the coast.

Robinson and Kloss [86] state that these birds were especially numerous at Tasan at the time of their visit and that they were breeding, the set being five to seven eggs. The date is not given, but it was some time in April, as their trip ended at Hat Sanuk on April 28, after they had spent some time at Chumpon and nearly a fortnight at Koh Lak; de Schauensee [87] collected a series on his third expedition to Siam and the Shan States and gives a detailed description of the soft parts, too long to be quoted here.

I doubt whether the Philippine and Celebes birds are the same as the mainland form, but do not here wish to go into the question.

A related form, *Gallus gallus bankiva* Temminck, occurs in Java; *Gallus gallus jabouillei* Delacour and Kinnear is found in Tonkin, North Annam, and North Laos; and *Gallus gallus murghi* Robinson and Kloss, occurs in northern India.

POLYPLECTRON BICALCARATUM BICALCARATUM (Linnaeus)

Pavo bicalcaratum LINNAEUS, Systema naturae, ed. 10, p. 156, 1758 (China, error; Thoungyah, Burma [88]).

One wing and two tails from natives, Kao Pae Pan Nam, Lomsak, February 1934.

The wing and one tail seem to fit the description of this species. The other tail differs in having the buff spots arranged into irregular bars and the ocelli without a buffy outer ring, possibly an immature plumage.

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[86] Journ. Nat. Hist. Soc. Siam, vol. 5, no. 1, p. 22, 1921.

[87] Proc. Acad. Nat. Sci., Philadelphia, vol. 86, p. 273, 1934.

[88] Lowe, Ibis, 1925, p. 477.

Robinson and Kloss [89] refer Gairdner's records from Ratburi and Petchaburi to this form; Gyldenstolpe's [90] record from Khun Tan may belong here or it may be *P. b. bailyi*.

The form ranges from Chiltagong, Chin and Kachin Hills, south to northern Tenasserim and east to northern Siam, northern Laos, and southern Yunnan. There are few records for Siam, probably owing to the secretive habits of the birds.

POLYPLECTRON GERMAINI Elliot

Polyplectron germaini ELLIOT, Ibis, 1866, p. 56 (Cochinchina).

One female, Huey Yang, Kao Luang, Nakon Sritamarat, October 7, 1930.

This seems to be the first definite record of this fine species from Peninsular Siam.

Delacour and Jabouille [91] give the range of the species as Cochinchina, south Annam, Cambodia, and a great part of southern Siam.

POLYPLECTRON MALACCENSIS (Scopoli)

Phasianus malaccensis SCOPOLI, Deliciae florae et faunae insubricae, pt. 2, p. 93, 1786 (Malacca).

Dr. W. L. Abbott collected an adult male at the Rumpin River, Pahang, June 26, 1902.

He gives the soft parts as: Iris pale blue; naked orbital skin orange; bill blackish, fleshy beneath at base; gape orange; feet slaty. Weight, 1½ pounds.

Ogilvie-Grant [92] records it from Patani; August Müller [93] from the island of Puket under the name *P. bicalcaratum*.

The species ranges from southern Tenasserim southward through Peninsular Siam to the Malay States and Sumatra. It is readily distinguished by the ocelli of the tail, which are united, or nearly so, along the shaft.

PAVO MUTICUS Linnaeus

Pavo muticus LINNAEUS, Systema naturae, ed. 12, 1766, p. 272 (Japan, error; Java[94]).

One male and one female, Bangnara, Patani, May 21 and 22, 1924; one male, Kao Soi Dao, Trang, January 22, 1934; one immature without label.

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[89] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 22, 1921.

[90] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 158, 1916.

[91] Oiseaux l'Indochine Française, vol. 1, p. 243, 1931.

[92] Fasciculi Malayenses, pt. 3, p. 123, 1905.

[93] Die Ornis der Insel Salanga, p. 80, 1882.

[94] Hartert, Nov. Zool., vol. 9, p. 538, 1902.

Dr. W. L. Abbott collected the following: Two males and one female in 1899 in Trang (Kok Sai, January 24; Naklua, March 2); and one female, Kamamun River, Trengganu, October 2, 1900.

The species ranges from Burma to Siam, and French Indo-China, and down Peninsular Siam to the Malay States and Java. It apparently is not uncommon in suitable localites all over Siam proper and Peninsular Siam.

Robinson and Kloss's [95] record of *Pavo cristatus* from Nong Kok, Ghirbi, Peninsular Siam, is evidently a slip of the pen, as it is not mentioned in their later paper.[96]

ARGUSIANUS ARGUS ARGUS (Linnaeus)

Phasianus argus Linnaeus, Systema naturae, ed. 12, p. 272, 1766 (Chinese Tartary; Malacca, as fixed by Hartert [97]).

One adult male, Sichol, Bandon, May 21, 1930.

Dr. W. L. Abbott collected the following: Seven males and six females in Trang (Lay Song Hong, August 22, December 8, 1896; Kao Soi Dao, 2,000 feet, February 16, 20, 1899); two males and one female at Telok Besar, Tenasserim, February 27 and March 16, 1904.

Dr. Abbott gives the following on the soft parts (in the males): Iris brown; head dull blue; bill horny white, yellowish above and bluish about nostrils; feet red, soles whitish, claws horny white. He gives the weights of four males from Trang as 4½, 5, 5½, and 5¾ pounds; of two females from Trang as 3 and 3½ pounds. The two males from Tenasserim weighed 6 pounds each; the one female, 3¾ pounds.

The range of this bird is from southwestern Siam and southern Tenasserim southward through Peninsular Siam to the Malay States and Sumatra.

Gyldenstolpe [98] reports flushing one west of Koh Lak; this is about as far north in this direction of which there are any records. Farther south in the Malay Peninsula it is a common bird in suitable localities.

A related form, *Argusianus argus grayi* (Elliot), occurs in Borneo.

Family TURNICIDAE: Hemipodes

TURNIX TANKI BLANFORDII Blyth

Turnix blanfordii Blyth, Journ. Asiat. Soc. Bengal, vol. 32, p. 80, 1863 (Burma and Arrakan; type from Thayetmyo).

One male and one female, Bangkok, March 6 and April 4, 1924; one female, Nan, April 13, 1930; one male, Muek Lek, April 16, 1933.

The form ranges from southern Ussuriland and Manchuria south over eastern and southern China to Assam, Burma, Siam proper, Tonkin, Annam, Cochinchina, Laos, and Cambodia.

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[95] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 89, 1919.

[96] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 23, 1921.

[97] Nov. Zool., vol. 9, p. 538, 1902.

[98] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 158, 1916.

In northern China this bird is only a summer resident, migrating late in summer and early in fall farther south. It breeds in Burma and Siam, however. Herbert[99] found it breeding at Ban Khang, central Siam, in July and August, the clutch consisting of four eggs. De Schauensee[1] found it very common in winter at Chiengmai; Robinson[2] reports it from Ok Yam on the Franco-Siamese Boundary; Robinson and Kloss[3] collected it at Tasan, Chumpon, Peninsular Siam, and Koh Lak, southwest Siam; the Tasan record is about the limit of its range in this direction. Otherwise, it seems to be fairly well distributed over Siam in suitable localities. Probably it is more plentiful in winter when the resident birds are increased by others from farther north.

Turnix tanki tanki Blyth occurs in India.

TURNIX SUSCITATOR INTERRUMPENS Robinson and Stuart Baker

Turnix suscitator interrumpens ROBINSON and STUART BAKER, Bull. Brit. Orn. Club, vol. 48, p. 60, 1928 (Kossoon, Peninsular Siam).

One female, Bangnara, Patani, May 20, 1924; one female, Bukit, Patani, January 23, 1931; one female, Haad Yai, July 12, 1929; one male, Kao Soi Dao, Trang, January 9, 1934; two females, Koh Lak, June 9, 1933; one male, Bangkok, September 12, 1923; three males and four females, Bung Borapet, July 21, 24, 1932, March 24, 30, 1933; two males Mesarieng, January 22, 23, 1933.

Dr. W. L. Abbott collected one male and four females in Trang (Tyching, April 25–June 18, 1896; Lay Song Hong, August 20, 1896); and one male on Pulo Langkawi, Langkawi Islands, December 3, 1899. He records the soft parts as: Iris yellowish white or white; bill horn blue, culmen brownish; feet leaden.

The specimens from Koh Lak and eastward average lighter below and grayer, less rusty above than the Peninsular birds; it is somewhat doubtful if they should be placed in the same form, but they are being left there for the present.

The form ranges from Patani, Peninsular Siam, to Peninsular Burma, north to northern, central, and eastern Siam.

Chasen and Kloss[4] record it from the Raheng district, and a male from their collection was sent to the United States National Museum. De Schauensee[5] took a series at Chiengmai and a pair at Nakon Sritamarat. Herbert[6] found it breeding near Bangkok, the set consisting of four eggs, deposited from June to August.

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[99] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 339, 1926.

[1] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 276, 1934.

[2] Ibis, 1915, p. 721.

[3] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 24, 1921.

[4] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 154, 1928.

[5] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 276, 1934.

[6] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 337, 1926.

TURNIX SUSCITATOR ATROGULARIS (Eyton)

Hemipodius atrogularis Eyton, Proc. Zool. Soc. London, 1839, p. 107 (Malacca).

Dr. W. L. Abbott collected a single female at the Rumpin River, Pahang, June 19, 1902. He records the soft parts as: Iris straw-yellow; feet pale leaden.

The only noticeable difference between this specimen and the series of *interrumpens* is that the black throat patch in the Pahang bird appears to be more extensive.

The range of this form is given as the Malay Peninsula from the Province of Wellesley southward and northern Sumatra.

Family GRUIDAE: Cranes

ANTIGONE ANTIGONE SHARPII (Blanford)

Grus (Antigone) sharpii Blanford, Bull. Brit. Orn. Club, vol. 5, p. 7, 1895 (Burma).

Dr. W. L. Abbott writes that this variety of sarus is common at two or three places in Trang. None was shot, but they are often kept alive by the natives and grow exceedingly tame.

Robinson and Kloss[7] state that they observed this form in the ricefields near Sawi Bay, south of Chumpong, in April 1919; Gairdner[8] records it from the Ratburi and Petchaburi Districts. Gyldenstolpe[9] states that it is generally distributed over the whole country and that while he was camped at Muang Fang, northwestern Siam, a native brought him a light-set egg, which was taken from a nest in the vicinity of the camp; there was only the one egg in the nest. The egg was bluish white without any spots. Deignan[10] states that it occurs at Chiengmai from December to March; de Schauensee[11] took a male 10 kilometers north of Ban Jong, northern Siam, January 14, and states that it is very rare about Chiengmai but common at Chieng Rai and Chieng Sen, where the country is more suitable for them.

It ranges from eastern Assam and Burma to Siam and Cochinchina.

Family RALLIDAE: Rails, Coots, Gallinules

HYPOTAENIDIA STRIATA ALBIVENTRIS (Swainson)

Rallus albiventris Swainson, Animals in menageries, p. 337, 1838 (India).

One male and two females, Bangkok, February 4, 1924, June 3, 1926, and February 3, 1929; one male, Bung Borapet, June 27, 1932; one female, Nakon Sritamarat, Peninsular Siam, August 30, 1924.

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[7] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 72, 1921.

[8] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 30, 152, 1914–15.

[9] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 141, 1916.

[10] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 170, 1931.

[11] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 583, 1930.

Compared with a single female of *H. s. gularis* of Java, the above specimens are larger, with longer, heavier bills. The three females measure: Wing, 123, 122, 120 mm; culmen, 34, 37, 36 mm.

Dr. W. L. Abbott took a male at Tanjong Kalong, Singapore, on May 2, 1900. It measures: Wing, 123 mm; culmen, 35 mm. The Bangkok male measures: Wing, 123 mm; culmen, 42 mm. The male from Bung Borapet: Wing, 128 mm; culmen, 34 mm.

A single female from Java (*H. s. gularis*) measures: Wing, 110 mm; culmen, 32 mm.

The series at my command is too small to define the range of the present race with certainty, but it extends from India to French Indo-China. In Siam it has been taken at Bangkok or vicinity, Chiengmai, and in the Peninsula, but nowhere commonly.

Herbert[12] found it breeding in central Siam from early in June until August and occasionally in September; six or seven eggs constitute a set. De Schauensee[13] records four specimens from Paknam under the name *H. s. gularis*.

RALLINA FASCIATA (Raffles)

Rallus fasciatus RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 328, 1822 (Sumatra).

Dr. W. L. Abbott collected one male and one female, Tyching, Trang, July 3 and 11, 1896. The male was caught on a nest with five eggs; the female was taken from a nest with six eggs. Both sexes must incubate.

Dr. Abbott gives the colors of the soft parts as follows: Male—iris vermilion, orbital skin and legs vermilion, claws horny brown; bill black, leaden blue at base. Female—iris in two rings inner yellow-orange, the outer dark red; eyelids red; feet pinkish red, claws dark horny brown; bill leaden, black above.

The eggs taken by Dr. Abbott are rounded-ovate, dull white with a slight gloss, and measure as follows: 31.8 by 25, 32.7 by 24.9, 32.6 by 24.9, 32 by 24.8, 31.5 by 24.4, 32.8 by 24.3, 31.5 by 24.5, 32.8 by 24.8, 32.3 by 24.7, 30.6 by 24.6, and 31.5 by 24.7 mm (the set of six given first). Average of the 11 eggs, 32 by 24.7 mm.

Bonhote[14] records it from Patani; Robinson[15] states that his party found it common in the edges of the ricefields at Ban Koh Klap, Bandon, the latter part of June and early in July 1913; later he records a male taken on Pulo Terutau, November 1, 1913; Robinson and Kloss[16] state that this species is highly migratory, though whether merely local is not known. At the end of October 1909, after a period of heavy wind and rain, this bird appeared in large numbers near Alor Star, Kedah; Gyldenstolpe[17] gives the additional locality, Khun Tan, which seems to be unusually far north for it; the record may belong to the next species.

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[12] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 340, 1926.

[13] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 277, 1934.

[14] Proc. Zool. Soc. London, 1901, vol. 1, p. 78.

[15] Journ. Federated Malay States Mus., vol. 5, p. 88, 1915.

[16] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 41, 1921.

The range of the species is from southern Burma south over the Malay Peninsula to Sumatra, Java, Borneo, the Philippine Islands and southward to the Moluccas; Pelew Islands. Possibly only a winter visitor in the southern part of its range.

RALLINA NIGROLINEATA (G. R. Gray)

Zapornia nigrolineata G. R. Gray, Catalogue of the specimens and drawings of Mammalia and birds of Nepal and Thibet . . . , p. 143, 1846.—Hodgson, *in* Gray's Zool. Misc., no. 3, p. 86, 1844 (Nepal; nomen nudum).

Rallus superciliaris Eyton, Ann. Mag. Nat. Hist., ser. 1, vol. 16, p. 230, 1845 (Malay Peninsula); *not* Vieillot, Nouv. Dict. Hist. Nat., ed. 2, vol. 28, p. 565, 1819.

Porzana amauroptera Jerdon, The birds of India, vol. 3, p. 725, 1864 (northern India).

Dr. Abbott took a male near the base of Kao Num Plu, Trang, March 9, 1897.

He records the color of the soft parts as follows: Iris orange; bill blue-black, leaden blue beneath; feet dark leaden.

This species differs from *R. fasciata* in having the white spots on the outer webs of the outer primaries reduced to two toward the base and only one or two white spots on the outer web of the outer primary covert, and the other wing coverts outwardly unspotted; the back olive-brown rather than rood brown. *R. fasciata* has the outer web of the primaries barred with white or light buff to near the tip, and all the wing coverts, except the lesser, barred blackish and white. *R. fasciata* has a smaller wing and shorter bill; wing in two specimens, 122–122.5 mm; culmen, 22–23 mm. In the single male of *R. nigrolineata* listed above, the wing measures 141 mm and the culmen 29 mm.

There is a female in the United States National Museum collected by Dr. W. L. Abbott at the Mandau River, East Sumatra, December 1, 1906, that differs from the Trang male as follows: The pileum is the same color as the back (prouts brown); the cheeks a much lighter brown; a supraloral streak to the middle of the eye above, hazel; foreneck and upper chest saccardos umber, with tawny centers to feathers showing through; lower chest with a broad band of tawny just above the black and white bars of the breast; there are no white bars on the inner webs of the primaries, except at the extreme base. This is probably changing from the immature to adult plumage.

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[17] Ibis, 1920, p. 763.

Wing, 138.5 mm; culmen, 25.5 mm. Robinson and Kloss [18] record a male from Langkawi, taken February 1909; Robinson [19] collected the same sex from Ok Yam, on the Franco-Siamese boundary, January 3, 1915; Robinson and Kloss,[20] under the name *Rallina fasciata*, record a female from Pulo Sireh, east side of Junkseylon (Puket), February 13, 1918, and later [21] one from Tasan, Chumporn; Rodgers and Deignan [22] record a female from Doi Angka, 4,500 feet, April 14, 1931.

This rail breeds from northwestern India east to Annam and Burma and migrates south in winter to Ceylon, Siam, northern Annam, the Malay Peninsula, and Sumatra. Little is known of its breeding range. Robinson and Kloss say it is migratory in the Peninsula; possibly it may breed in northern Siam.

PORZANA PUSILLA PUSILLA (Pallas)

Rallus pusillus Pallas, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, p. 700, 1776 (Dauria).

Two males, Bangkok, March 28, 1927, and December 22, 1928.

This little crake breeds in northeast Siberia, northern China, and as far south as Kashmir, wintering in Indo-China, Siam, Java, Borneo, and the Philippines.

In Siam it is only a winter resident, and there are but few records of its occurrence. It has been recorded from Bangkok, Minburi (east-northeast of Bangkok), and Me Klong (near Bangkok); Deignan [23] has recorded three from the Chiengmai region; in Peninsular Siam it has been recorded only from Patalung but probably occurs in suitable places elsewhere.

LIMNOBAENUS PAYKULLII (Ljungh)

Rallus paykullii Ljungh, Kungl. Svenska Vet.-Akad. Handl., vol. 34, p. 259, 1813 (near Banjarmassing, Borneo, and near Batavia, Java; type from Borneo in Nat. Hist. Mus. Stockholm).

One male, Bangkok, Siam, November 3, 1924.

This species breeds in eastern Siberia and China and migrates to the Malay Peninsula, Borneo, and Java. I know of no other record for Siam.

AMAURORNIS PHOENICURA CHINENSIS (Boddaert)

Fulica chinensis Boddaert, Table des planches enluminéez d'histoire naturelle, p. 54, 1783 (Hongkong).

One male and one female, Bangkok, February 6 and October 1, 1924; one male, Koh Chang, January 10, 1926; one male, Nan, April 13, 1930; one female, Ban Nam Kien, Nan, April 21, 1930; one immature male still in down but with feather tracts showing on the lower parts, Ban Sadet, Sriracha, June 1, 1925; one male and one female, Bung Borapet, June 21 and 29, 1932; one female, Muang Pai, December 28, 1932. Not uncommon in suitable localities throughout the whole country and evidently resident.

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[18] Ibis, 1911, p. 10.
[19] Ibis, 1915, p. 725.
[20] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 91, 1919.
[21] Ibis, 1921, p. 40.
[22] Proc. Biol. Soc. Washington, vol. 47, p. 92, 1934.
[23] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 81, 1936.

There are three specimens (one male and two females) collected by Dr. W. L. Abbott in Trang, January 4 and February 9, 1897, and January 4, 1899, and one male from Telok Besar, Tenasserim, November 26, 1900.

The male from Trang is without any white frontal band and evidently is a bird of the preceding breeding season. Some specimens lack the black or sooty border on the sides of the neck and flanks. This is an age character, I believe, as the male without the white frontal band is also without the black neck border. Just how long it takes the birds to assume the fully adult plumage, I do not know.

Herbert[24] found it breeding at Mahachai, Ban Yang, and Chiengrak Noi; he found one nest on July 19 and others during August; the set consisted of from three to five eggs.

The form ranges from the greater part of India east to Assam, Burma, southern China, Indo-China, Siam, and south through Peninsular Siam to Malacca.

GALLICREX CINEREA (Gmelin)

Fulica cinerea GMELIN, Systema naturae, vol. 1, pt. 2, p. 702, 1789 (China).

Three males and one female, Bangkok, August 6, September 10, October 1, and October 19, 1924; one male, Nong Mong Muang, Krabin, August 30, 1925.

This species probably occurs all over Siam in suitable localities and throughout the Peninsula. It has been recorded from Patelung and Patani, Peninsular Siam; Ratburi, southwestern Siam; Bangkok, central Siam; and Chiengmai, northern Siam. Herbert[25] found it breeding in central Siam from the middle of June to mid-September and states that the usual set consists of four eggs. Deignan[26] reports it common at Chiengmai from March until September. This would indicate that it was migratory in north Siam as it is in China.

The species is of wide distribution being found from Ceylon, India, and Burma to southern and eastern China, Indo-China, Siam, south to the Malay Peninsula, Sumatra, Java, Borneo, the Philippines, and Celebes.

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[24] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 346. 1926.

[25] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 312, 1926.

[26] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 169, 1931.

GALLINULA CHLOROPUS INDICUS Blyth

Gallinula chloropus? var. *indicus* Blyth, Journ. Asiat. Soc. Bengal, vol. 11, p. 887, 1842 (Calcutta, Bengal).

Two males, Potaram, February 6 and 7, 1926; 12 males and 7 females, Bung Borapet, June 23, 1932, March 23–28, 1933; one male, Bung Tabgrit, March 27, 1933; one male, Koh Lak, June 15, 1933.

This form of gallinule probably occurs all over Siam proper. Deignan [27] states that at Chiengmai it occurs locally from December to March; this would indicate that it is only a winter visitor there, and evidently farther south the resident birds are augmented in the cold season by an influx from the north. De Schauensee [28] took a male at Meklong, April 4.

The form ranges from Kashmir and southern Tibet to southern India, Ceylon, Burma, southern and eastern China, Japan, Indo-China, and Siam.

PORPHYRIO POLIOCEPHALUS POLIOCEPHALUS (Latham)

Gallinula poliocephala Latham, Index ornithologicus, Suppl., p. lxviii, 1801 (India).

One male, Bang Than, August 11, 1923; two males and two females, Bung Borapet, June 25, 27, 1932, March 23 and 28, 1933.

The four specimens from Bung Borapet are fairly uniform in having the wings a more or less uniform motmot blue, while the male from Bang Than has the wing blackish with a bluish green wash and the lesser wing coverts lighter and brighter, approaching the color of the chest, which is near China blue as in *viridis;* the back is dark purplish blue, however. Both *viridis* and *poliocephalus* evidently occur together during the breeding season.

Chasen and Kloss [29] record it from the Raheng District, and the female from this collection is now in the United States National Museum; Deignan [30] reports it common during the rains on the great marshes between Chiengmai and Lampoon; Gairdner's [31] records for the Ratburi and Petchaburi Districts are open to doubt; Gyldenstolpe [32] shot a male at Chieng Hai; Herbert's [33] description of the eggs from Hua Takhae taken July 15, is open to doubt unless the parent was taken.

This form ranges from Ceylon to India, Burma, Tenasserim, and northern and central Siam.

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[27] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 169, 1931.

[28] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 578, 1928.

[29] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 158, 1928.

[30] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 169, 1931.

[31] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 31, 152, 1914–15.

[32] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 149, 1916.

[33] Journ. Siam Soc. Nat. Hist. Suppl., vol 6, p. 343, 1926.

PORPHYRIO VIRIDIS Begbie

Porphyrio viridis Begbie, The Malay Peninsula, p. 515, 1834 (Malacca).
Porphyrio edwardsi Elliott, Ann. Mag. Nat. Hist., ser. 5, vol. 1, p. 98, 1878 (Cochinchina, Saigon, Bangkok).

One female, Bang Than, August 11, 1923; one male, Potaram, February 7, 1926; four males and two females, Bung Borapet, June 20–30, 1932.

All these specimens have more or less greenish-black backs and wings, while the blue of the foreneck and chest is near China blue. The specimens identified as *Porphyrio poliocephalus poliocephalus* have backs of a dark purplish blue, wings motmot blue, and foreneck and chest alice blue except in one specimen. As both *P. p. poliocephalus* and *P. viridis* were taken at the same locality in the breeding season, I am giving the latter the status of a species.

The range of this species is a little uncertain. It was described from Malacca and is supposed to range up the Malay Peninsula, but I know of no records for Peninsular Siam north of the Malay States. It occurs in central Siam and ranges east to Cambodia, Laos, and Annam. It seems to be the commoner species of the two found in Siam from central Siam eastward.

Family HELIORNITHIDAE: Sun-grebes

HELIOPAIS PERSONATA (Gray)

Podica personata Gray, Proc. Zool. Soc. London, 1848, p. 90 (Malacca).

One male, Pran, southwest Siam, June 5, 1928.

Dr. W. L. Abbott collected a female at Maliwun, Tenasserim, on March 18, 1900. He gives the color of the soft parts as: Bill yellowish brown above; feet green, edges of webs yellow, claws pale horn-brown.

Bonhote [34] records a female from Biserat, Jalor, Patani; Robinson [35] records a male from Koh Pangan (Pennan) and states that it is widely distributed throughout the Malay Peninsula in varied situations from sluggish mangrove creeks to rapid mountain streams but that it is nowhere common. Williamson [36] records it from Muang Khlung, Chantabun; Vijjakich [37] obtained a specimen in a small, shallow marsh about 15 miles along the Lampang-Chiengrai road, probably the first record for northern Siam.

The species ranges from Assam, Bengal, and Burma south through Siam and the Malay Peninsula to Sumatra; it has been taken also in Cambodia.

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[34] Proc. Zool. Soc. London, 1901, vol. 1, p. 79.

[35] Journ. Federated Malay States Mus., vol. 5, p. 141, 1915.

[36] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 32, 1918.

[37] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 330, 1934.

Family JACANIDAE: Jacanas

HYDROPHASIANUS CHIRURGUS (Scopoli)

Tringa chirurgus Scopoli, Deliciae florae et faunae insubricae, pt. 2, p. 92, 1786 (Philippines).

One immature male, Klong Rangsit, October 8, 1924; three immature females, Potaram, February 5, 1926, and January 23, 1927; one immature male, Bung Borapet, March 26, 1933; one immature female, Koh Chang, December 22, 1925.

Dr. W. L. Abbott collected an immature male on Singapore Island, May 16, 1899.

This species is not uncommon in suitable localities in central and western Siam [38]; Robinson and Kloss [39] say that in the Malay Peninsula it is widely distributed, but extremely rare; Deignan [40] reports it common at Chiengmai except during the driest months. The bird seems to occur all over Siam in suitable localities.

The species is found from Ceylon north through India and Burma to northern China and south through Siam and the Indo-Chinese countries to the Philippines.

METOPIDIUS INDICUS (Latham)

Parra indica Latham, Index ornithologicus, vol. 2, p. 765, 1790 (India).

Three adult males, two immature males, and seven adult females, Potaram, February 4–6, 1926, and January 23, 1927; one immature male, two adult females, and one immature female, Bangkok, March 29, 1924, and March 6, 1927; four adult males and five adult females, Bung Borapet, June 20–23, 1932, and March 23, 1933. One female (June 22) from Bung Borapet still retains a few white feathers on the chest.

Gyldenstolpe [41] records it from Chieng Hai and states that it is common in the swamps of Central Siam and that a nest and five fresh eggs were found at Nong Meh Lua on August 7, 1914; Herbert [42] reports it from Hua Takhae and Ban Laing, Central Siam, where three sets of eggs were collected on July 1, 28, and September 11; four eggs seem to constitute a set. Deignan [43] found it resident at Chiengmai. It is rather common in suitable localities throughout the whole country.

The species ranges from India and Burma, east to Siam and southern Indo-China, and south through the Malay Peninsula to Sumatra and Java.

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[38] Gyldenstolpe, Ibis, 1920, p. 765.

[39] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 58, 1921.

[40] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 170, 1931.

[41] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 142, 1916.

[42] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 345, 1926.

[43] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 170, 1931.

Family ROSTRATULIDAE: Painted-snipe

ROSTRATULA BENGHALENSIS BENGHALENSIS (Linnaeus)

Rallus benghalensis Linnaeus, Systema naturae, ed. 10, p. 153, 1758 (Bengal).

One male and one female, Bangkok, October 23, 1926, and February 22, 1927.

This bird is reported to be a common resident throughout Siam and in the Malay Peninsula. Deignan [44] reports it resident throughout the year at Chiengmai but common only during the rains. In the cold weather he has found as many as ten under a bush a quarter of a mile from any water. Forty [45] found four young a few days old near Bangkok on September 22; in the vicinity of Bangkok, Herbert [46] found a nest and four eggs on July 6, a nest and four eggs on August 11, young nearly fully fledged on September 18, and young fully fledged on October 3; later [47] he reports that sets of eggs were received in May, June, July, and August and that four eggs constitute a set.

Robinson and Kloss [48] state that in the Malay Peninsula it is a fairly common species.

The species ranges from Asia Minor through Persia to southern and eastern China and Japan, south to Indo-China, India, Philippines, Sumatra, Java, and Borneo; also Africa, south of the Sahara.

Family CHARADRIIDAE: Plovers, Turnstones, Surfbirds

LOBIVANELLUS INDICUS ATRONUCHALIS Blyth

Lobivanellus atronuchalis Blyth, *in* Jerdon, The birds of India, vol. 3, p. 648, 1864 (Burma).

One male, two females, and one unsexed, Koh Chang, January 8 and 12, 1926; two males and two females, Pak Chong, eastern Siam, February 4 and May 7, 1925; April 29 and May 9, 1926; one male and one female, Muang Kanburi, April 14, 1918; one male, Sam Roi Yot, November 14, 1932.

Dr. W. L. Abbott took a male and female at Prahmon, Trang, March 10, 1896; a female with three eggs at Trang, February 24, 1899; a male on Pulo Langkawi, December 4, 1899; and a male and female in Tenasserim (Tanjong Badak, November 25, 1900; Boyces Point, February 16, 1904). He gives the soft parts as: Iris deep red or dark orange; wattles, orbital skin, and basal part of bill red, tip black; feet yellow with a tinge of greenish, claws black.

Robinson [49] records it from Koh Samui and Koh Pennan and later [50] from Pulo Terutau; Herbert [51] states that in Central Siam the nesting season appears to be April and May, but he had seen young early in May and had taken fully incubated eggs by May 13 and a set of three fresh eggs as late as June 20.

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[44] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 170, 1931.

[45] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 55, 1914.

[46] Ibid., p. 54.

[47] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 348, 1926.

[48] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 69, 1921.

[49] Journ. Federated Malay States Mus., vol. 5, p. 142, 1915.

[50] Journ. Federated Malay States Mus., vol. 7, p. 138, 1917.

[51] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 346, 1926.

Apparently the form is commonly distributed throughout the whole country.

The form ranges from Assam, south of the Brahmaputra, through Burma to the Malay Peninsula, Sumatra, and the Indo-Chinese countries. It is resident where found.

HOPLOPTERUS DUVAUCELII (Lesson)

Charadrius duvaucelii Lesson, Dict. Sci. Nat. (Levrault), vol. 42, p. 38, 1826 (Calcutta).

Charadrius ventralis Wagler, Systema avium, Charadrius, sp. 11, p. 59, 1827 (Calcutta).

One female, Chomtong, northern Siam, November 29, 1928, "in flocks on river Ping"; one male and one female, Ta Fang, January 17, 1933.

The United States National Museum contains a male and a female taken by Dr. W. L. Abbott at Lay Song Hong, Trang, August 16 and October 28, 1896. He describes the soft parts as: Iris blackish; bill black; feet and legs dull black.

Robinson and Kloss [52] think Dr. Abbott's specimens represent the southern limit in the Peninsula. De Schauensee found it common at Chiengrai, northern Siam, in winter [53] and on the Mekong and Mekok rivers on sandbars.[54] Lowe states that it breeds in February in western Siam, laying two eggs in the river bed on sandy gravel.[55]

In Siam the species is generally distributed along the larger rivers of the whole country and in Peninsular Siam as far south as Trang.

The species ranges from northern and eastern India east to Assam and Yunnan and south to Indo-China, Siam, and the Malay Peninsula as far as Trang.

SQUATAROLA SQUATAROLA (Linnaeus)

Tringa squatarola Linnaeus, Systema naturae, ed. 10, p. 149, 1758 (Sweden).

Dr. W. L. Abbott collected a female at Prahmon, Trang, March 19, 1896.

Robinson [56] records a female from Koh Muk, Trang, January 5, 1917; Gyldenstolpe [57] observed it once at Koh Lak; Williamson [58] records it from Paknam, Chantabun.

The breeding range of this species is circumpolar. It migrates south late in summer. On migration it usually frequents sea beaches or salt-water mud flats.

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[52] Journ. Nat. Hist. Soc. Siam, vol. 5, 1921, p. 59.

[53] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 581, 1930.

[54] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 278, 1934.

[55] Ibis, 1933, p. 490.

[56] Journ. Federated Malay States Mus., vol. 7, p. 138, 1917.

[57] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 143, 1916.

[58] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 34, 1918.

PLUVIALIS DOMINICUS FULVUS (Gmelin)

Charadrius fulvus Gmelin, Systema naturae, vol. 1, pt. 2, p. 687, 1789 (Tahiti).

Two males, Bangkok, September 11, 1925; one female, Bandon, January 9, 1927.

Dr. W. L. Abbott collected a male, two females, and one unsexed on St. Luke Island, Mergui Archipelago, January 20, 21, 1900.

This form is a winter visitor, occurring throughout the whole country at that season. Deignan [59] reports it uncommon at Chiengmai from October to February.

It breeds in northeastern Siberia and Alaska and winters in southeastern Asia and some of the Pacific Islands to Australia.

CHARADRIUS DUBIUS CURONICUS Gmelin

Charadrius curonicus Gmelin, Systema naturae, vol. 1, pt. 2, p. 692, 1789 (Curonia).

Two males, Nong Mong, Muang Krabin, August 24, 1925; one male and one female, Bangkok, November 3, 1926, April 12, 1934; two males and one female, Sam Roi Yot, November 11, 1932.

All the Philippine specimens examined by me have longer and stouter bills and shorter wings than mainland birds. It is doubtful if *C. d. dubius* extends to the continent. It hardly seems likely that the bird breeding in eastern Asia (Korea, China, etc.) is the same as that breeding in Europe, but of the latter I have seen but few specimens.

The form breeds in the greater part of Europe and in Asia south to the Himalayas. It winters to the southward in Asia, in southern China, Indo-China, Siam, India, the Malay Peninsula, to the Sunda Islands.

The records of the breeding and nonbreeding forms are so involved that they are not given.

CHARADRIUS DUBIUS JERDONI (Legge)

Aegialitis jerdoni Legge, Proc. Zool. Soc. London, 1880, p. 39 (Ceylon and central India).

One female, Chiengmai, November 27, 1928.

This is much smaller than the preceding form and is probably the breeding bird of southeast continental Asia. The above female measures: Wing, 106; culmen, 12 mm.

It ranges in southeastern Asia, from southern China to Indo-China, Siam, Burma, India, and the Malay Peninsula. It is said also to extend southward to New Guinea.

De Schauensee [60] collected specimens at Petrieu, October 22, and

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[59] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 171. 1931.

[60] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p 278, 1934.

Bangkok, November 3 and 4, and Gyldenstolpe[61] at Khun Tan. Deignan[62] reports it resident at Chiengmai.

The remaining records of this and the preceding form are too involved to be quoted.

CHARADRIUS ALEXANDRINUS DEALBATUS (Swinhoe)

Ægialitis dealbatus SWINHOE, Proc. Zool. Soc. London, 1870, p. 138 (south coast of China, Formosa, and Hainan; type from Amoy, China).

One female, Konken, March 21, 1929; three females, Sam Roi Yot, November 8–10, 1932.

Dr. W. L. Abbott collected two females and an unsexed specimen on Pulo Langkawi, December 1, 1899.

The form ranges from southern Japan to southern China, Indo-China, Siam, Tenasserim, and the Malay Peninsula.

Deignan[63] records it from Chiengmai in winter, once in June; Robinson[64] found it on Koh Samui and Koh Pennan, Bandon, about to breed. Most of the Siamese records, however, are of winter-taken birds.

CHARADRIUS PERONI Schlegel

Charadrius peroni SCHLEGEL, Muséum d'histoire naturelle des Pays-Bas, vol. 4, no. 29, livr. 7, p. 33, 1865 (Borneo, Java, Semao).

Two males and two females, Sam Roi Yot, November 8–10, 1932.

The two males and one of the females appear to be in full breeding plumage; these specimens are the northernmost record to date. Gyldenstolpe[65] records this plover from Koh Lak; Robinson[66] reports it from Pulo Langkawi and from Pulo Telibun (Trang); Robinson and Kloss[67] say they have a considerable series of this species from the Malay Peninsula and various islands off the coast.

Dr. W. L. Abbott took a male and female at Tanjong, Sikakap, east coast of Johore, August 7, 1901.

This is a resident species from the Malay Peninsula to Java, Borneo, the Philippines, and other islands of the East Indies as far as Celebes.

CHARADRIUS MONGOLUS ATRIFRONS Wagler

Charadrius atrifrons WAGLER, Isis, 1829, p. 650 (Bengal, India).

One male and six females, Lem Sing, Chantabun, June 9, 1926; four males and one female, Nakon Sritamarat, September 28 and 29, 1926; one male and three females, Sam Roi Yot, November 8–10, 1932.

There is a female collected by Dr. W. L. Abbott on Pulo Langkawi, western Malay Peninsula, December 6, 1899, in the United States National Museum.

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[61] Ibis, 1920, p. 757.

[62] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 82, 1936.

[63] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 171, 1931.

[64] Journ. Federated Malay States Mus., vol. 5, p. 142, 1915.

[65] Kungl. Svenska Vet.-Akad. Handl., vol. 56, p. 144, 1916.

[66] Journ. Federated Malay States Mus., vol. 7, p. 139, 1917.

[67] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 63, 1921.

The form breeds in the Kirghiz Steppes, Ladak, and Tibet, migrating south in winter to Persia, India, Siam, Malay Peninsula, Sunda Islands, and eastern Africa.

Robinson and Kloss [68] record it from Pulo Terutau, December; Robinson [69] from Koh Pennan, June; and Robinson and Kloss [70] from Koh Lak.

CHARADRIUS MONGOLUS MONGOLUS Pallas

Charadrius mongolus Pallas, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, p. 700, 1776 (Mongolia).

One female, Lem Sing, Chantabun, June 9, 1926.

While breeding specimens of *C. mongolus* and *C. atrifrons* are perfectly distinct and easily differentiated, the nonbreeding birds are extremely difficult. *C. mongolus* has a shorter tarsus; otherwise I know of no certain way to separate the two forms in nonbreeding plumage. The tarsi in 10 specimens of *C. mongolus*, measure 28.5–31 (29.8) mm; in six birds in breeding plumage of *C. atrifrons*, 32.5–34.5 (33.1) mm.

There are few authentic records of *C. mongolus* from Siam; the migration route is more to the eastward. Most of the records of *C. m. mongolus* from Siam and the Malay Peninsula are probably *C. m. atrifrons*.

Charadrius m. mongolus breeds from eastern Siberia west to Mongolia and migrates south late in summer to Japan, eastern China, the Philippines, Celebes, New Guinea, and Australia.

PAGOA LESCHENAULTII (Lesson)

Charadrius leschenaultii Lesson, Dict. Sci. Nat. (Levrault), vol. 13, p. 36, 1826 (Pondicherry, India).

One female, Koh Chang, January 9, 1926; one male and one female, Lem Sing, Chantabun, June 9, 1926; one male, Sriracha, February 4, 1927; four females, Sam Roi Yot, November 8–10, 1933.

Dr. W. L. Abbott collected a pair at Prahmon, Trang, March 24, 1896, and a pair on Pulo Langkawi, December 6, 1899; also a female on Loughborough Island, Mergui Archipelago, January 26, 1900.

In Peninsular Siam it has been recorded from Koh Lak and the island of Puket. Robinson and Kloss [71] say it occurs sparingly throughout the Malay Peninsula.

The species breeds in the Kirghiz Steppes and northwestern Mongolia and winters as far south as Australia, the Solomon Islands, and South Africa.

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[68] Ibis, 1911, p. 12.

[69] Journ. Federated Malay States Mus., vol. 5, p. 142, 1915.

[70] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 61, 1921.

[71] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 61, 1921.

Family SCOLOPACIDAE: Snipes, Woodcocks, Sandpipers

NUMENIUS ARQUATA ORIENTALIS C. L. Brehm

Numenius orientalis C. L. Brehm, Handbuch der Naturgeschichte allen Vögel Deutschlands, p. 610, 1831 (East Indies).

Dr. W. L. Abbott collected two males in Trang (Prahmon, March 21, 1896; mouth of the Plian River, December 24, 1898); one male, Kissering Island, Mergui Archipelago, February 5, 1904; one female, Tanjong Badak, Tenasserim, November 25, 1900; and one male, Boyces Point, Tenasserim, February 12, 1904.

This form breeds in the Baical region and Dauria and probably westward, migrating late in summer to eastern Africa, India, Burma, Indo-China, and the Malay Archipelago.

Robinson and Kloss [72] state that it is numerous on the coasts of the Malay Peninsula in the winter months; Gyldenstolpe [73] observed only a few specimens during his stay in Siamese Malaya, November 1914 to February 1915.

NUMENIUS PHAEOPUS VARIEGATUS (Scopoli)

Tantalus variegatus Scopoli, Deliciae florae et faunae insubricae, pt. 2, p. 92, 1786 (no locality-Luzon).

Dr. W. L. Abbott collected two females at Bok Pyin, Tenasserim, February 16, 1900; and one female at Sir William James Island, Mergui Archipelago, December 29, 1903.

This form breeds in eastern Siberia and migrates south in the fall as far as New Guinea, Australia, and the Pacific islands as far east as the Marianne Islands.

Robinson and Kloss [74] report it common in the Malay Peninsula in the winter months; Gyldenstolpe [75] observed great numbers on the coast of the Gulf of Siam.

TOTANUS TOTANUS EURHINUS Oberholser

Totanus totanus eurhinus Oberholser, Proc. U. S. Nat. Mus., vol. 22, p. 207, 1900 (Lake Tsomoriri, Ladak).

One male, Meklong, April 12, 1926; one male, Bangkok, June 3, 1926; one female, Nakon Sritamarat, September 27, 1926.

Dr. W. L. Abbott collected a female at Prahmon, Trang, March 7, 1896.

This form breeds in the high mountains of western China, Tibet, and India, and probably of the Altai, and migrates in fall to India, Siam, Indo-China, the Malay Peninsula, Philippines, Sunda Islands, and Celebes.

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[72] Ibis, 1911, p. 12.

[73] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 145, 1916.

[74] Ibis, 1911, p. 12.

[75] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 69, 1913.

Robinson and Kloss [76] report it common along the coasts of the Malay Peninsula in the winter months; Gyldenstolpe [77] found it abundant at the mouth of the Menam Chao Phya, along the Gulf of Siam, and at Tha Law; later [78] he states that it is a common winter visitor to Central and Lower Siam; Robinson [79] records it from Klong Yai, southeastern Siam, January 5; and later [80] collected a male from Langkawi, December 11, and states that it was common on Koh Muk in January.

TOTANUS STAGNATILIS Bechstein

Totanus stagnatilis Bechstein, Ornithologisches Taschenbuch . . ., vol. 2, p. 292' 1803 (Germany).

Three females, Meklong, April 12, 1926.

Williamson [81] records one taken by Aagaard at Bang Boon, near Bangkok, March 17, 1912; later he took it at Tachin and Bangplasoi, near Bangkok, March 1917.

The species breeds from southeastern Europe across Asia to Lake Baical and migrates to Africa, India, Siam, Indo-China, and the Sunda Islands to Australia.

GLOTTIS NEBULARIUS (Gunnerus)

Scolopax nebularia Gunnerus, *in* Leem's Beskrivelse over Finmarkens Lapper . . ., p. 251, 1767 (Lappland).

One male and one female, Meklong, April 12, 1926; one female, Bangkok, January 30, 1927.

Dr. W. L. Abbott secured a single male on Kissering Island, Mergui Archipelago, February 2, 1904.

This species breeds in northern Europe and Asia and migrates to Africa, southern Asia, the Philippine and Sunda Islands to Australia.

Robinson and Kloss [82] report the greenshank very common on the western coast of the Peninsula but probably rarer on the eastern side; Gyldenstolpe [83] saw a small flock at Tha Law, April 2, and found it numerous along the coast of the Gulf of Siam by the end of April; Robinson and Kloss [84] record it from Kuala Kedah and Pulo Terutau in November and December; Robinson [85] records it from Klong Yai, southeastern Siam, January 5; and later [86] from Koh Muk, Trang, January 4; de Schauensee [87] took a single female at Chiengrai, January 6; Deignan [88] had only one record for the Chiengmai region, a single specimen at Nawng Haw in October, but later he secured two additional specimens, in September.[89] It is not an uncommon winter visitor to Siam; it is probably more numerous in migration and more abundant in the south.

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[76] Ibis, 1911, p. 12.

[77] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 70, 1913.

[78] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 145, 1916.

[79] Ibis, 1915, p. 725.

[80] Journ. Federated Malay States Mus., vol. 7, 1917, p. 140.

[81] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 62, 1916.

[82] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 66, 1921.

[83] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 70, 1913.

[84] Ibis, 1911, p. 13.

[85] Ibis, 1915, p. 726.

[86] Journ. Federated Malay States Mus., vol. 7, p. 140, 1917.

[87] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 585, 1930.

TRINGA OCHROPUS Linnaeus

Tringa ochropus LINNAEUS, Systema naturae, ed. 10, p. 149, 1758 (Sweden).

One male, Nakon Sritamarat, March 13, 1929.

The green sandpiper is a common winter visitor to every part of Siam [90]; in Peninsular Siam, apparently, it is not so common, and I have seen no previous record.

The species breeds in northern Europe and Asia and winters to the southward.

RHYACOPHILUS GLAREOLA (Linnaeus)

Tringa glareola LINNAEUS, Systema naturae, ed. 10, p. 149, 1758 (Sweden).

Seven males and three females, Bangkok, March 2, September 17, October 26, and December 26, 1925, October 23, and November 4, 1926; one male and one female, Potaram, February 4, 1926; two males, Kao Seming, Krat, October 11, 1928; one female, Ban Ho Kam, February 28, 1929; one female, Nan, April 13, 1930; one male, two females, and one unsexed, Sam Roi Yot, November 11, 1932; two females, Bung Borapet, March 21 and 30, 1933.

There is a male in the United States National Museum collected by Dr. W. L. Abbott at Lay Song Hong, Trang, December 25, 1896.

Judged from the number of specimens of the wood sandpiper contained in collections from eastern Asia, it must be the commonest migrant wader in the East. It breeds in northern Europe and Asia and migrates south in the fall to Africa, India, southeastern Asia, the Malay Archipelago, and Australia.

Gyldenstolpe [91] in recording it from Koh Lak says that it is very common in winter over the whole country; Deignan [92] reports it abundant at Chiengmai from July to March. Evidently it is a common winter visitor and migrant throughout Siam.

ACTITIS HYPOLEUCOS (Linnaeus)

Tringa hypoleucos LINNAEUS, Systema naturae, ed. 10, p. 149, 1758 (Sweden).

One female, Bangkok, October 28, 1925; one male and one female, Nakon Sritamarat, October 7, 1926; one male, Tha Lo, Bandon, September 24, 1931; one female, Koh Tao, September 25, 1928; one male, Nan, April 13, 1930.

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[88] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 172, 1931.

[89] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 84, 1936.

[90] Gyldenstolpe, Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 145, 1916.

[91] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 146, 1916.

[92] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 173, 1931.

Dr. W. L. Abbott collected a male at Lay Song Hong, Trang, October 3, 1896; and a female on Pulo Langkawi, December 2, 1899.

Robinson and Kloss[93] state that this sandpiper is found in the Malay Peninsula throughout the year, the summer residents probably being sterile. Deignan[94] gives it as common at Chiengmai from September to April.

Next to the wood sandpiper this is probably the commonest migrant sandpiper occurring in Siam. It breeds throughout temperate Europe and Asia, migrating late in summer to Africa and southern Asia and south through the Philippines and the Sunda Islands to Australia.

LIMNODROMUS SEMIPALMATUS (Blyth)

Macrorhamphus semipalmatus Blyth, Journ. Asiat. Soc. Bengal, vol. 17, p. 252, 1848 (Calcutta).

Micropalama taczanowskia Verreaux, Rev. et Mag. Zool., 1860, p. 206, pl. 14 (Dauria).

Dr. W. L. Abbott collected a male on Pulo Adang, Butang Islands, December 15, 1899.

This dowitcher is a very rare bird in collections. Williamson[95] records a male shot by Aagaard at the mouth of the Lacon River, Nakon Sritamarat, September 1, 1911; Robinson and Kloss[96] say they have a specimen taken in the Dindings by Williamson's collector.

It is known to breed from western Siberia east to Transbaikalia and central Mongolia, migrating to northern India, Burma, China, Siam, and Indo-China.

CAPELLA STENURA (Kuhl)

Scolopax stenura Kuhl, *in* Bonaparte, Ann. Storia Nat. Bologna, vol. 4, p. 335 1830 (Sunda Islands).

Three males and four females, Bangkok, September 12 and 17, and November 8, 1925, and November 2 and 3, 1926; two males and two females, Koh Chang, January 4 and 7, 1926; four males and one female, Nong Khor, near Sriracha, southeast Siam March 20 and 24, 1926; four females, Kao Seming, Krat, October 12 and 15, 1928; one male, Bung Borapet, March 22, 1933.

The following specimens of this snipe collected by Dr. W. L. Abbott in the Malay Peninsula or vicinity are in the United States National Museum: Four males and three females, Trang (Prahmon, March 16, 1896; Lay Song Hong, October 26–December 23, 1896; Chong, January 22, 1897; Trang, February 12, 1897); two males and three females, Pulo Langkawi, December 1–6, 1899; one female, Tanjong Badak, Tenasserim, March 25, 1904.

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[93] Ibis, 1911, p. 13.

[94] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 172, 1931.

[95] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 62, 1916.

[96] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 64, 1921.

This is a very common winter visitor to Siam, arriving in August and leaving in April, according to Forty[97]; Deignan[98] confirms these dates for Chiengmai; Ogilvie-Grant,[99] on the authority of Robinson, states that it arrived in Patani the second week of September; Robinson[1] records it from Langkawi, February 10 to April 25, the latter a late date.

This species breeds in eastern Siberia and migrates to India, southern China, Siam, Indo-China, the Malay Pensinula, Philippines, and the Greater Sunda Islands.

CAPELLA GALLINAGO RADDEI (Buturlin)

Scolopax (*Gallinago*) *gallinago raddei* BUTURLIN, Limicolae of the Russian Empire, pt. 1, p. 54, 1902 (East Siberia).

One male and one female, Bangkok, November 2 and 3, 1926; two males and one female, Nong Preng, January 29, 1927; two males and four females, Potaram, February 7, 1926, and January 23, 1927; two males, Bandon, January 9, 1927.

Several in the above series have molted the outer tail feathers; in this condition they are difficult to distinguish from *C. stenura*. The latter has the under wing coverts more heavily barred with black and the black bars on the axillaries broader.

Gyldenstolpe[2] states that this form is fairly common during the winter but not so common as *C. stenura*. Forty[3] says that it arrives at Bangkok in September and departs in the first half of March or somewhat later; Deignan[4] states that at Chiengmai it is common from September to March. There is a specimen from the island of Salanga (Puket) in the Hume collection.[5]

The form breeds in eastern Siberia and migrates to India, Siam, Indo-China, the Philippines, and the Greater Sunda Islands.

SCOLOPAX RUSTICOLA RUSTICOLA Linnaeus

Scolopax rusticola LINNAEUS, Systema naturae, ed. 10, p. 146, 1758 (Sweden).

One female, Nong Khor, southeastern Siam, February 5, 1927; one female, Khun Tan, 3,000 feet, February 15, 1932.

Deignan[6] reports this as an uncommon winter visitor on the plain at Chiengmai. Gyldenstolpe[7] says that the woodcock has been met with a few times in northern and central Siam during the winter time; Robinson and Kloss[8] state that W. J. F. Williamson informed them that the woodcock is fairly common in northern Siam in the winter months and that it is regularly obtained by sportsmen from near Chiengmai down to Raheng, between October and March.

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[97] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 137, 1923.

[98] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 172, 1931.

[99] Fasciculi Malayenses, pt. 3, p. 117, 1905.

[1] Journ. Federated Malay States Mus., vol. 7, p. 141, 1917.

[2] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 147, 1916.

[3] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 137, 1923.

[4] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 172, 1931.

[5] Catalogue of the birds in the British Museum, vol. 24, p. 641, 1896.

[6] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 172, 1931.

[7] Ibis, 1920, p. 762.

[8] Journ. Nat. Hist. Soc. Siam, vol. 5, 1921, p. 69.

The woodcock breeds in northern Europe and Asia and migrates to Africa and southern Asia (India, Siam, southern China, and Indo-China).

ANTELIOTRINGA TENUIROSTRIS (Horsfield)

Totanus tenuirostris Horsfield, Trans. Linn. Soc. London, vol. 13, p. 192, 1821 (Java).

Dr. W. L. Abbott collected an adult male at Prahmon, Trang, March 21, 1896. He gives the soft parts as: Iris dark brown; bill black; feet dull olive-brown, claws black.

Robinson and Kloss [9] state that they have only four specimens from the Malay Peninsula where it is a rare bird. Williamson [10] found this species in considerable numbers at Lat Yai, near Meklong, Central Siam, in February 1918.

The species breeds probably in northern Siberia and migrates south late in summer through China, Japan, India, Siam, the Malay States, Java, the Philippines, etc., to Australia. Its rarity is probably more apparent than real.

PISOBIA RUFICOLLIS (Pallas)

Trynga ruficollis Pallas, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, p. 700, 1776 (Siberia).

Six males and one female, Nakon Sritamarat, September 28 and 29, 1926.

Dr. W. L. Abbott collected a male at Prahmon, Trang, March 24, 1896.

While *Pisobia minuta* and *Pisobia ruficollis* in breeding plumage are quite distinct and easily differentiated, specimens of the two species in winter plumage are extremely hard to discriminate. I know of no absolute characters to tell the two apart in the cold season. There are certain average characters, but they are not absolutely certain. Specimens in winter plumage should be compared carefully with authentic specimens of the two species, as there are certain slight differences that are hard to convey in words. The wing in *ruficollis* averages slightly longer, the tarsus shorter, and the bill shorter and heavier. Six specimens of *ruficollis* measure: Wing, 98.5–106 (101.6); culmen, 17–18.5 (17.7); tarsus, 19–20.5 (19.4) mm. Six specimens of *minuta* measure: Wing, 89–100.5 (96.2); culmen, 18–20.5 (19.2); tarsus, 20–22 (21) mm.

Of the two, *ruficollis* is probably the commoner; *minuta* is relatively rare in Siam and the records more or less open to doubt.

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[9] Journ. Nat. Hist. Soc. Siam, vol. 5, 1921, p. 68.

[10] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 35, 1918.

De Schauensee [11] records *ruficollis* from Chieng Sen Kao, Mekong River, northern Siam, January 13; Gyldenstolpe [12] says specimens have been obtained at Patani, Peninsular Siam.

The species breeds in northeastern Siberia and western Alaska and migrates late in summer along the coast of eastern Asia and through the Philippine and the Sunda Islands to Australia.

PISOBIA TEMMINCKII (Leisler)

Tringa temminckii LEISLER, Nachträge zu Bechsteins Naturgeschichte Deutschlands, p. 78, 1812 (Hanau, Germany).

One female, Chomtong, northern Siam, November 29, 1928.

Williamson [13] records this sandpiper from Bangkok; Deignan [14] found it common in the winter of 1930–31 at Chiengmai; de Schauensee [15] records one from Bangkok, March 12; Lowe [16] took a male on the Meping, March 7; on his third expedition de Schauensee [17] obtained three females at Bangkok, November 3, and one female at Chiengmai, January 26.

This species breeds in northern Europe and Asia and migrates late in summer to Africa and southern Asia. It is easily distinguished from the other small stints occurring in Siam by the white outer tail feathers.

PISOBIA SUBMINUTA (Middendorff)

Tringa subminuta MIDDENDORFF, Reise in den äussersten Norden und Osten Sibiriens . . ., vol. 2, pt. 2, p. 222, 1851 (Stanovoi Mountains, Siberia).

One male, Meklong, April 12, 1926.

Williamson [18] has recorded this stint from Bangkok; Sharpe [19] lists two from the island of Salanga (Puket), taken in February and March; Baker [20] reported a male in Herbert's collection from Klong Wang Hip, Peninsular Siam; Gyldenstolpe [21] took a single female near Sap Tue on the Mewong, Northern Siam, April 23, 1914; Robinson and Kloss [22] record a single male from Koh Lak, southwestern Siam, April 7, 1919, but say it is very common. Deignan [23] took a single male at Chiengmai, January 30, 1932; de Schauensee [24] secured a male at Chiengmai, January 26, and two specimens from Bangkok, October 1932.

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[11] Proc. Acad. Nat. Sci. Philadelphia, vol 81, p. 586, 1930.

[12] Ibis, 1920, p. 760.

[13] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 199, 1915.

[14] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 172, 1931.

[15] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 577, 1928.

[16] Ibis, 1933, p. 491.

[17] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 279, 1934.

[18] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 199, 1915.

[19] Catalogue of the birds in the British Museum, vol. 24, p. 555, 1896.

[20] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 39, 1920.

[21] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 146, 1916.

[22] Journ. Nat. Hist. Soc. Siam, vol. 5, no. 1, p. 68, 1921.

[23] Rodgers and Deignan, Proc. Biol. Soc. Washington, vol. 47, p. 92, 1934.

[24] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 279, 1934.

The species breeds in eastern Siberia and the Kurile Islands and migrates to southeastern Asia to winter. It can be distinguished from the other small stints wintering or passing through Siam by the long middle toe and claw (about 36 mm).

EROLIA TESTACEA (Pallas)

Scolopax testacea PALLAS, *in* Vroeg's Beredeneerde catalogus, Adumbratiunculae, p. 6, 1764 (Holland).

Two females, Nakon Sritamarat, September 27 and 29, 1926.

Ogilvie-Grant [25] records it from Patani; Williamson [26] states that it has been recorded by Aagaard from Nakon (Lacon) Sritamarat, August 1–May 16, 1911–12, and from Chaiya, near Bandon, June 16, 1912; Robinson and Kloss [27] record a male from Kuala Kedah, taken November 1907.

The species breeds in northern Siberia and migrates through Europe to Africa and India, Indo-China, Siam, the Malay Peninsula, and the Sunda Islands to Australia.

LIMICOLA FALCINELLUS (Brünnich)

Scolopax falcinellus BRÜNNICH, Ornithologia borealis, p. 49, 1764 (Zealand, Denmark).

One female, Nakon Sritamarat, September 28, 1926.

Ogilvie-Grant [28] records this species from Kampong Budi, Patani; Williamson [29] from the mouth of the Chao Phya River.

The species breeds in northern Europe and Asia and migrates south late in summer to the Red Sea, India, the Malay Peninsula, the Philippines, and the Sunda Islands to Australia.

Family RECURVIROSTRIDAE: Stilts, Avocets

HIMANTOPUS HIMANTOPUS (Linnaeus)

Charadrius himantopus LINNAEUS, Systema naturae, ed. 10, p. 151, 1758 (south Europe).

Four males and one female, Lem Sing, Chantabun, June 4–11, 1926; two females, Nakon Sritamarat, September 27, 1926.

The Lem Sing specimens are in worn breeding plumage and evidently were breeding; an egg was taken from the oviduct of the female, June 11.

Gyldenstolpe [30] observed small flocks in the swampy country south of Ratburi in January. Williamson [31] records it from Meklong;

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[25] Fasciculi Malayenses, pt. 3, p. 118, 1905.

[26] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 62, 1916.

[27] Ibis, 1911, p. 14.

[28] Fasciculi Malayenses, pt. 3, p. 118, 1905.

[29] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 36, 1918.

[30] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 145, 1916.

[31] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 35, 1918.

Baker[32] from Paklat, near Bangkok; Deignan[33] from Ban Mechai, Chiengrai, northern Siam, May 9, 10, 1936.

The species ranges from southern Europe, Africa, Asia, and Ceylon to Siam, Indo-China, etc. Usually resident; only migratory in the northern part of its range.

Family BURHINIDAE: Thick-knees

ORTHORHAMPHUS MAGNIROSTRIS (Vieillot)

Oedicnemis magnirostris VIEILLOT, Nouv. Dict. Hist. Nat., vol. 23, p. 231, 1818 (no locality; Australia).

Dr. W. L. Abbott collected one male, Pulo Adang, Butang Islands, December 17, 1899, and two males and two females in the Mergui Archipelago (St. Luke Island, January 19, 1900; Sullivan Island, February 1, 1900, and January 5, 1904; Bentinck Island, March 8, 1900).

He gives the colors of the soft parts as: Iris yellow; feet pale greenish yellow or pale straw yellow, toes dark bone brown, claws black; bill black, base greenish yellow.

Robinson and Kloss[34] record a male taken on Delisle Island, Peninsular Siam, February 19, 1919. This and the specimen collected by Dr. Abbott on Pulo Adang apparently are the only specimens taken in Siamese territory to date. The bird seems to be an island-frequenting species rather than a mainland one.

The species ranges over the greater part of the Indo-Australasian region from the Andaman Islands to Australia. It has been divided into a number of nominal forms based upon insufficient material.

Family GLAREOLIDAE: Coursers, Pratincoles

GLAREOLA MALDIVARUM Forster

Glareola (Pratincola) maldivarum FORSTER, Faunula Indica, p. 11, 1795 (Maldive Islands).

Eight males and four females, Bangkok, March 2, 1925, April 20 and June 3, 1926; September 16, 1925; one male, Nong Kae, Central Siam, May 5, 1929.

The United States National Museum has a small series from Luzon, Philippines, and a male from Java. Apparently they do not differ in color or size from Siamese specimens. McGregor[35] says it visits the Philippines in the winter months, but the dates on a number of the Museum's series, late March and April 28, are during the breeding season farther north. Whether it breeds in Java I do not know; the few specimens examined by me from there were taken in fall. The few breeding birds examined from China apparently do not differ from Siamese specimens. For the present, without more evidence, it does not seem to be worth while to recognize *Glareola maldivarum orientalis* Leach.

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[32] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 39, 1920.

[33] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 169, 1936.

[34] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 56, 1921.

[35] A manual of Philippine birds, pt. 1, p. 153, 1909.

Herbert [36] states that the bird comes to Siam to breed late in winter and breeds in colonies; at Sapatoom eggs were very plentiful by March 16, but in the colony at Samkok eggs were not plentiful until the latter part of April. Another colony at Ayuthia bred about the same time as that at Samkok. The Sapatoom birds leave earlier, as their numbers are gradually reduced during May and June, but some young remain until August 8. A set of three fresh eggs was taken at Samkok on June 15. Two, and sometimes three eggs, constitute a set. Gyldenstolpe [37] took a pair at Koh Lak on December 1, 1914; Deignan [38] found it common at Nawng Haw in March 1929; de Schauensee [39] took three specimens at Hua Mak, March 17; Robinson and Kloss [40] record a male from Koh Lak, taken April 16. I have seen no records for Peninsular Siam, though it has been taken in Kedah.

The species breeds from southeastern Siberia, Mongolia, and southern Manchuria south to India, Siam, and Indo-China and migrates through the Malay Archipelago to Australia.

GALACHRYSIA LACTEA (Temminck)

Glareola lactea Temminck, Manuel d'ornithologie, ed. 2, vol. 2, p. 503, 1820, (Bengal).

Two females, Ban Tai, February 27, 1929.

This species has been recorded by Baker [41] from Krabin, central Siam, and by Chasen and Kloss [42] from the Raheng District, western Siam. Deignan [43] found a single bird at Nawng Haw, northern Siam, in March 1929; de Schauensee [44] found it common on the sandbars in the Mekong on both sides of the river at Chieng Sen, February 12; Lowe [45] found it very common during the first week of March near Kempempet on the Meping.

The species ranges from Ceylon to India, Burma, northern Siam, and southern Laos.

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[36] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 344, 1926.

[37] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 142, 1916.

[38] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 170, 1931.

[39] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 278, 1934.

[40] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 56. 1921.

[41] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 38, 1920.

[42] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 160, 1928.

[43] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 171, 1931.

[44] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 278, 1934.

[45] Ibis, 1933, p.490.

Family LARIDAE: Gulls, Terns

CHLIDONIAS HYBRIDA JAVANICA (Horsfield)

Sterna javanica HORSFIELD, Trans. Linn. Soc. London, vol. 13, p. 198, 1821 (Java).

One male, Bangkok, May 27, 1926; one male and one female, Bung Borapet, March 26, 1933.

Gyldenstolpe[46] records it as fairly common in the Inner Gulf of Siam and along the coasts of southwestern and Peninsular Siam. Robinson and Kloss[47] say they have examined many specimens in W. J. F. Williamson's collection taken near Bangkok.

The form ranges from Assam, Burma, Siam, and the Malay States to Java, Celebes, and the Philippines.

CHLIDONIAS LEUCOPTERA (Temminck)

Sterna leucoptera TEMMINCK, Manuel d'ornithologie, p. 483, 1815 (coasts of the Mediterranean).

One female, Bangkok, May 25, 1926.

Williamson[48] has taken it near Bangkok in February, April, and October; Robinson[49] records it as common in Penang Harbor, March 1911; a large series was secured in the same place in October.

This species can usually be distinguished from *C. hybrida*, even when immature, by size alone and by having some black feathers in the underwing coverts as a rule, but in the very young, where these are lacking, by the white upper tail coverts.

The species breeds from southeastern Europe to central Asia and migrates south in fall to India, Burma, China, the Malay Peninsula, the Sunda Islands, and the Philippines.

STERNA HIRUNDO TIBETANA Saunders

Sterna tibetana SAUNDERS, Proc. Zool. Soc. London, 1876, p. 649 (Tibet).

One male and three females, Nakon Sritamarat, September 20, 1926.

Two of these specimens are immature. I have no material in the same stage of plumage with which to compare them. The adults seem to belong to this form and presumably the two immatures do likewise.

This tern has been recorded by Robinson[50] from Pulo Terutau, November 29.

The form breeds in the inland waters of Ladak, Tibet, northwestern Szechwan, and Turkestan and migrates to India, Burma, and the Malay States.

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[46] Ibis, 1920, p. 770.

[47] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 48, 1921.

[48] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 37, 1918.

[49] Journ. Federated Malay States Mus., vol. 5, p. 17, 1913.

[50] Journ. Federated Malay States Mus., vol. 7, p. 142, 1917.

Chasen[51] assigns all Malay Peninsula records to *Sterna longipennis* but upon insufficient evidence, it seems to me. *Sterna longipennis* has an entirely black bill, while in *Sterna hirundo tibetana* the bill (in the skin) is light colored basally, probably red in life. The bill in *longipennis* is longer; the culmen in 10 adults measures 32–39 (36) mm; the culmen in 10 adult *tibetana*, 31–34 (32.7) mm. Unfortunately the young of *tibetana* seem to have dark bills, and I am unable to distinguish specimens of the forms in this plumage except by the bills. I suspect that *longipennis* migrates more to the eastward, but I may be mistaken.

STERNA LONGIPENNIS Nordmann

Sterna longipennis Nordmann, *in* Erman's Verzeichniss von Thieren und Pflanzen, p. 17, 1835 (mouth of the Kutchui River, Sea of Okhotsk).

Three immature males, Nakon Sritamarat, September 20, 1926.

The culmens in these three males measure: 35, 35.5, and 37 mm, which is too much for *tibetana*.

This species breeds in northeastern Asia and migrates along the coasts of China through the Philippines to New Guinea.

Saunders[52] records it from Tongka (Junkseylon) and Malacca.

STERNA ANAETHETA ANAETHETA Scopoli

Sterna anaethetus Scopoli, Deliciae florae et faunae insubricae, pt. 2, p. 92, 1786 (Guinea, error; Philippines).

Dr. W. L. Abbott had eight birds fly aboard his ship on a dark night, October 9, 1902, 30 miles west of Penang, of which he saved a pair, both immature; previously he had taken an immature female that came aboard his schooner off Malacca, November 9, 1899. He notes it as common everywhere in the Straits of Malacca.

Williamson[53] found it breeding on a rocky islet near Koh Phai and on some small islets near Koh Rin, July 17 and 18; later[54] he secured eggs on an islet near Koh Chuan, Inner Gulf of Siam; Robinson[55] states that it breeds on the Takang Burong rocks off the coast of Pahang, where eggs were taken July 15, 1912.

The form breeds on islands in the China Sea from Formosa to the Malay States and Siam.

STERNA ALBIFRONS SAUNDERSI Hume

Sterna saundersi Hume, Stray Feathers, vol. 5, 1877, p. 324, (Karachi, Sind, India).

There are two males in the United States National Museum collected by Dr. W. L. Abbott at Prahmon, Trang, Peninsular Siam, March 21, 1896.

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[51] Bull. Raffles Mus., No. 11, p. 45, 1935.

[52] Catalogue of the birds in the British Museum, vol. 25, p. 69, 1896.

[53] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 63, 1916.

[54] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 85, 1918.

[55] Journ. Federated Malay States Mus., vol. 5, p. 17. 1913.

This form differs from *S. a. sinensis* and *S. a. pusilla* in having the shafts of the three outer feathers dark.

Robinson and Kloss [56] report this tern as occurring in some numbers in the winter in the Straits of Malacca, but apparently the above are the only definite Siamese records.

The form ranges from the Red Sea and Somali coasts east to the Malay Peninsula.

STERNA ALBIFRONS SINENSIS Gmelin

Sterna sinensis GMELIN, Systema naturae, vol. 1, pt. 2, p. 608, 1789 (China).

One male, two females, and one unsexed, Lem Sing, Chantabun, June 8, 14, 1926.

This small series agrees very well with a small series from China in size and color. The culmens in five breeding males from China measure 30, 30, 30.5, 31.5, and 32 mm. The single male from Lem Sing measures 32.5 mm. The four breeding females from China have culmen measurements of 27, 29, 29, 29.5 mm. Two females from Siam have culmen measurements of 28.5 and 29 mm.

The form ranges from the coast of Ceylon and Burma to Siam, China, Korea, Indo-China, and the Malay Peninsula. It is migratory in the northern part of its range but probably resident in the south.

Baker [57] records two females taken at Meklong, June 27; Williamson [58] took it at Koh Lak and Hua Hin in June; de Schauensee [59] took a female at Bangkok on March 9 and reports it common there over the Menam.

THALASSEUS BERGII EDWARDSI Mathews

Thalasseus bergii edwardsi MATHEWS, The birds of Australia, vol. 2, pt. 3, p. 347, 1912 (Ceylon).

Two males, Nakon Sritamarat, September 20, 1926.

Specimens of this form have been recorded from Tanjong Patani. Williamson [60] found it breeding on some small islands in the Gulf of Siam (Koh Rin and Koh Phai) in May 1918. Robinson [61] has recorded specimens from Pulo Terutau and Pulo Langkawi, taken in February and March; Herbert [62] reports it breeding on Koh Samui, Bandon.

The two males from Nakon Sritamarat agree with a male and female collected by Dr. W. L. Abbott at Bok Pyin, Tenasserim, February 9, 1900. The wings of the Nakon males measure 350 and 362 mm, the culmens 59 and 65 mm. Oberholser [63] places the Bok Pyin specimens under *Thalasseus bergii edwardsi*. In the absence of additional specimens I am regarding all Siamese records as of this race.

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[56] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 53, 1921.
[57] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 40, 1920.
[58] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 37, 1918.
[59] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 579, 1928.
[60] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 83, 1919.
[61] Journ. Federated Malay States Mus., vol. 7, p. 143, 1917.
[62] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 348, 1926.
[63] Proc. U. S. Nat. Mus., vol. 49, p. 520, 1915.

ANOUS STOLIDUS PILEATUS (Scopoli)

Sterna pileata Scopoli, Deliciae florae et faunae insubricae, pt. 2, p. 92, 1786 (Philippines).

Dr. W. L. Abbott took an immature female in the Straits of Malacca, November 18, 1899; an immature female off the Dindings, November 19, 1899; and an adult male 100 miles west of Penang, April 8, 1903.

Williamson [64] records this tern breeding on a rocky islet near Koh Chuan, Inner Gulf of Siam, in May 1918. Apparently this is the only Siamese record.

The form ranges in the Indian and western Pacific Oceans from the Seychelles to the Hawaiian Islands and south to northern Australia.

Family COLUMBIDAE: Pigeons, Doves

CROCOPUS PHOENICOPTERUS VIRIDIFRONS (Blyth)

Treron viridifrons Blyth, Journ. Asiat. Soc. Bengal, vol. 14, pt. 2, p. 849, 1845 (Tenasserim).

One female, Ban Nam Kien, Nan, April 21, 1930.

A topotypical female has the gray of the nape much lighter, the yellow collar broader, and the gray collar narrower than in the Siamese female.

Gyldenstolpe [65] records it as sparsely distributed in northern Siam, where specimens have been obtained at Meh Taw, Meh Lua, and along the Meh Yome River; Deignan [66] reports it irregularly common on the plain at Chiengmai, its movements being governed by the fruiting of certain trees; de Schauensee [67] assigns specimens from Metang to *annamensis*, a form I have not seen.

C. p. viridifrons ranges from Chittagong and Manipur on the west throughout Burma south to Moulmein and east into northern Siam. *C. p. annamensis* Ogilvie-Grant ranges from southern Annam to Cochinchina and lower Laos, possibly to southeastern Siam.

DENDROPHASSA FULVICOLLIS FULVICOLLIS (Wagler)

Columba fulvicollis Wagler, Systema avium, Columba, sp. 8, 1827 (Java, error; type locality fixed by Robinson and Kloss,[68] Sumatra).

Dr. W. L. Abbott took a male at Prahmon, Trang, March 31, 1896, and a male at Selitar, 9 miles from Singapore, Straits Settlements, May 18, 1899. He gives the soft parts as: Iris pink; bill pale bluish horn, base and cere dull red; feet livid purple, claws black.

The United States National Museum also contains a male from Tapanuli Bay, Sumatra, and a male from Banka. The latter is fulvous on the crown instead of the prussian red of the other three specimens. I think this is due to age or fading, however, as there are some prussian-red feathers coming in here and there.

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[64] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 38, 1918.

[65] Ibis, 1920, p. 738.

[66] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 166, 1931.

[67] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 271, 1934.

[68] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 30, 1921.

The wings of the four males measure: Trang, 152; Singapore, 144; Sumatra, 149; Banka, 156 mm.

The Trang specimen is the only record for Peninsular Siam, other than the one for Puket, quoted by Gyldenstolpe.[69] The latter I have been unable to trace.

The form ranges from southern Tenasserim through Peninsular Siam to the Malay States, Sumatra, Nias, Banka, and Billiton. It has also been recorded from Cochinchina.

Another form, *Dendrophassa fulvicollis baramensis* Meyer is found in northern Borneo. The Nias bird has been separated on the strength of a single female as *Dendrophassa fulvicollis melopogenys* Obserholser. The series of this sex at my command is too small to pass upon its validity.

DENDROPHASSA BISINCTA PRAETERMISSA (Robinson and Kloss)

Treron bisincta praetermissa Robinson and Kloss, Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 203, 1921 (Koh Lak, southwestern Siam).

One male, Ban Hin Ngom, February 25, 1929; one immature female, Pak Bhayoon, July 4, 1929; one male and two females, Sam Roi Yot, November 11, 1932.

The wing in the males measures 153 and 162 mm. The immature female is too young to be of any service for comparison.

A male collected by Dr. W. L. Abbott at Bok Pyin, Tenasserim, February 16, 1900, is more yellowish about the throat, forehead, and lower parts, especially the belly, when compared with the Siamese male. It measures 167 mm in the wing.

Robinson and Kloss have recorded it from Trang,[70] Ghirbi,[71] and Delisle Island and Koh Lak [72]; Gairdner [73] from the Ratburi and Petchaburi Districts; Barton [74] lists it from the Raheng District. Whether Robinson's records from Ok Yam [75] and from Lat Bua Kao and Koh Mesan [76] belong here or not, I cannot say; Robinson and Kloss [77] were apparently in doubt. They state that the wing is smaller, always under 150 mm. With these left out as doubtful, then, the range of this form extends from Selangor north through Peninsular Siam to southern Tenasserim and western Siam.

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[69] Ibis, 1920, p. 739.

[70] Ibis, 1910, p. 674.

[71] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 89, 1919.

[72] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 29, 1921.

[73] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 39, 151, 1914.

[74] Ibid., p. 107.

[75] Ibis, 1915, p. 723.

[76] Ibis, 1918, p. 82.

[77] Journ. Siam Soc. Nat. Hist., vol. 5, p. 29, 1921.

DENDROPHASSA VERNANS GRISEICAPILLA (Schlegel)

Treron griseicapilla SCHLEGEL, Ned. Tijdschr. Dierk., vol. 1, p. 71, 1863 (Sumatra and Banka; Sumatra has been designated as the type locality).

Dendrophassa vernans abbotti OBERHOLSER, Journ. Washington Acad. Sci., vol. 14, p. 298, 1924 (Tyching, Trang, Peninsular Siam).

Three males and one female, Bangnara, Patani, May 9 and June 6, 1924, and July 7, 1926; four males and four females, Koh Chang, January 1–10, 1926, and March 11, 1930; two females, Lem Sing, southeastern Siam, March 14, 1930.

The following specimens collected by Dr. W. L. Abbott are in the United States National Museum: One male, Singapore Island, May 20, 1899; one male, Pulo Tinggi, east coast of Johore, August 3, 1901; one female, Tanjong Dungun, Trengganu, September 21, 1900; two males (including the type of *abbotti*) and three females, Trang (Tyching June 2–27, 1896; Prahmon, March 31, 1896); three males, Tenasserim (Victoria, March 30 and November 24, 1900; Bok Pyin, February 1900).

He gives the soft parts as: Iris in two rings, inner blue, outer pale pink; bill leaden, base greenish yellow; orbital skin green; feet purplish red, claws pale horn brown.

With a series of 10 males from the Malay Peninsula and Tenasserim and seven males from southeastern Siam, but only one male from Sumatra and one male each from Banka and Billiton, I am unable to see any tangible color differences between the series, and the measurements show no appreciable difference in size.

Ten males from the Malay Peninsula (7) and Tenasserim (3) measure: Wing, 142–155 (149.3); tail, 80.5–100 (87); bill, including cere, 16–17.5 (16.7) mm. Seven males from southeastern Siam measure: Wing, 138–158 (150.5); tail, 79–90 (85); bill, including cere, 15.5–17 (16.2) mm. One male from Sumatra, one male from Banka, and one male from Billiton measure: Wing, 147.5–150 (148.5); tail, 87–94.5 (91); bill, including cere, 16–17.5 (16.6) mm. Five females from the Malay Peninsula measure: Wing, 141–150 (145); tail, 75–81.5 (78.5); bill, including cere, 16–16.5 (16) mm. Eight females from southeastern Siam measure: Wing, 142.5–153 (148.6); tail, 77–87.5 (81); bill, including cere, 16–17.5 (16.4) mm.

This race extends from Sumatra, Banka, and Billiton through the Malay Peninsula from Singapore north to Tenasserim and eastward to southeastern Siam, Cambodia, Cochinchina, and Annam.

Chasen and Kloss [78] record two females from Ban Dong, Raheng District, western Siam. This is the northernmost record I have seen. It has also been recorded from Bangkok,[79] and it occurs on many islands off the coast in the Gulf of Siam and along the west coast of the Malay

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[78] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 155, 1928.

[79] Gyldenstolpe, Ibis, 1920, p. 739.

Peninsula. Robinson[80] reports it from Koh Samui and Koh Pennan and obtained a heavily incubated egg of the latter on May 27.

A number of other forms have been named from islands off the west Coast of Sumatra, Java, the Natunas, Anambas, Philippines, and Celebes. Oberholser[81] recognizes no less than 11.

DENDROPHASSA OLAX OLAX (Temminck)

Columba olax TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, vol. 4, livr. 41, pl. 241, Dec. 1823 (Sumatra).

Dr. W. L. Abbott took a male and two females in Trang, March 9, 1897, and January 20, 1899. He gives the soft parts as: Male—iris in two rings, inner yellow, outer red; bill pale greenish horny, base and cere green; feet red. Female—iris yellowish white or pale yellow.

A male from Great Karimon Island does not differ materially from the Trang male. A series from Borneo seems to be smaller. The wings of eight Bornean males measure 114–124 (118.6) mm; wing of a male from Great Karimon Island, 130 mm; a male from Trang, 133 mm.

The Bornean race has been named *Dendrophassa olax arismiora* Oberholser. This will leave the range of *Dendrophassa olax olax* as Sumatra, the Malay States, and Peninsular Siam.

In the latter there are only three previous records known to me: Baker[82] records three males from Klong Wang Hip and a female in Herbert's collection; Robinson and Kloss[83] state that a pair (now in the British Museum) was collected by J. Darling near Ghirbi; and de Schauensee[84] collected a pair from Nakon Sritamarat.

TRERON CURVIROSTRA CURVIROSTRA (Gmelin)

Columba curvirostra GMELIN, Systema naturae, vol. 1, pt. 2, p. 777, 1789 (Tanna Island, error; type locality as designated by Robinson and Kloss,[85] Rawang, Selangor).

Three males and one female, Bangnara, Patani, May 8, 1924, July 11–12, 1926; two males, Tha Lo, Bandon, September 17 and 28, 1931.

Dr. W. L. Abbott collected five males and two females, Trang (Tyching, May 10, 1896; Koh Sai, December 30, 1898; and Trang, January 19–February 24, 1899). He describes the soft parts as: Iris orange or brownish yellow; naked skin about orbit pale green; bill horny yellow or pale greenish horny, dark red at base, claws horn brown.

This form probably does not extend much farther north than Bandon, and from there it ranges south to the Malay States and the

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[80] Journ. Federated Malay States Mus., vol. 5, p. 140, 1915.

[81] U. S. Nat. Mus. Bull. 159, pp. 32–33, 1932.

[82] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 30, 1920.

[83] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 31, 1921.

[84] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 271, 1934.

[85] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 28, 1921.

Straits Settlements. The specimens from Patani are slightly smaller than those from farther north in the Peninsula. No specimens have been examined south of Patani. The measurements and relationships will be discussed under the next form.

The male taken on January 19 by Dr. Abbott is an immature bird. The maroon of the back is coming in irregularly and is about half completed; the under tail coverts are being renewed. It still retains the old tail of the immature plumage, the feathers of which are old and worn, and much narrower than they are in the adult; the two outer primaries of the immature plumage are still in place, and the third, though new, is still in growth.

TRERON CURVIROSTRA NIPALENSIS (Hodgson)

Toria nipalensis Hodgson, Asiat. Res., vol. 19, p. 164, pl. 9, 1836 (Nepal).

One male, Huey Me Sae, December 24, 1932; one female, Ban Kiriwong, July 10, 1928; one male and one female, Pang Sok, eastern Siam, August 19, 1926; one male, Pak Chong, eastern Siam, May 10, 1925; one female, Hupbon, near Sriracha, May 25, 1925; one male and one female, Nong Khor, near Sriracha, March 21 and 26, 1926; two males and one female, Kao Seming, Krat, October 10–14, 1928; two males and two females, Koh Chang, January 8–9, 1926; one male, Ban Tarn Dam, southeastern Siam, March 5, 1930.

Dr. W. L. Abbott collected two males and one female, Domel Island, Mergui Archipelago, January 27 and 29, 1904; two males and one female, Tenasserim (Pakchan, December 19, 1900; Bok Pyin, February 16, 1900; and Boyces Point, February 9, 1904). He describes the soft parts as: Iris orange; naked orbital skin green; bill greenish yellow, base dark red; feet purplish red, claws pale horn brown.

Of the considerable series of *Treron curvirostra* in the United States National Museum, only the forms that have a bearing on the Siamese forms will be here considered. A series of males from Sumatra appears to be paler, especially below, with more white on the belly than in a series of the same sex from the Malay Peninsula, from Patani, north to Bandon. Males from Tenasserim and western, northern, and southeastern Siam are much darker below than Malay Peninsula birds. In the Malay Peninsula series there are one or two males that are dark like the northern birds, but there are no light-colored specimens among the large series from western, northern, and southeastern Siam. I have seen no Nepalese specimens nor any from India, but I assign the northern Siamese birds to *Treron curvirostra nipalensis*, as it does not appear to belong to forms occurring farther south. There seems to be a gradual darkening of the plumage below and an increase in size from the south to the north. Above, the differences are not so pronounced. The above dissimilarities also hold in the females, but not to the same extent. The palest specimen I have examined is a female from Bukit Parmassang, Banka Island (no. 180436).

Six males from eastern Sumatra measure: Wing, 135–143.5 (139.2); tail, 73–82.5 (78.4); culmen, 15–17 (16) mm.

Ten males from Peninsular Siam (Patani, 3; Trang, 5; and Bandon, 2): Wing, 132–147.5 (139.9); tail, 73–82 (78); culmen, 15.5–17 (16) mm.

Five males from Tenasserim (2), Mergui Archipelago (2), and western Siam (1): Wing, 146–151 (148.8); tail, 77–87 (82.5); culmen, 15.5–18 (16.9) mm.

Nine males from northern (1), eastern (3), and southeastern Siam (6): Wing, 140–151 (146.2); tail, 74–90 (82.7); culmen, 15–17 (15.7) mm.

Three females from eastern Sumatra (2) and Banka (1): Wing, 126–147.5 (133.5); tail, 69–71 (72.3); culmen, 15–15.5 (15.2) mm.

Three females from Peninsular Siam: Wing, 131.5–145.5 (138.3); tail, 72–76 (74); culmen, 15.5–16.5 (16) mm.

Three females from Tenasserim (1), Mergui Archipelago (1), and western Siam (1): Wing, 139–152 (145); tail, 70–82 (76.7); culmen, 15–16 (15.5) mm.

Eight females from northern, eastern, and southeastern Siam: Wing, 138.5–151 (144.6); tail, 75–89 (79.6); culmen, 15–17 (16).

The specimens from Patani are slightly smaller than birds from farther north in the Peninsula.

Specimens from Cochinchina and south Annam appear to belong with the birds from southeastern Siam.

Treron curvirostra nipalensis has a wide range, occurring from Nepal south through Assam and Burma to eastern Bengal, Tenasserim, the northern part of Peninsular Siam, all Siam proper, Cochinchina, Cambodia, Laos, and Annam. Other forms occur in the Philippines, Borneo, Java, Sumatra, and the chain of islands off the west coast of Sumatra.

BUTRERON CAPELLII MAGNIROSTRIS (Strickland)

Treron magnirostris Strickland, Ann. Mag. Nat. Hist., vol. 14, p. 116, footnote, 1844 (Malay Peninsula).

Two males, Bandon, January 8, 1897.

Dr. W. L. Abbott collected one male and three females at Lay Song Hong, Trang, October 26, November 21 and 28, 1896. He gives the soft parts as: Iris dark brown; orbital ring greenish yellow; bill pale greenish horny, cere green; feet yellow, claws yellowish leaden.

Robinson [86] records it from Mabak, Patani; Robinson and Kloss [87] from Trang. Glydenstolpe [88] states that Eisenhofer's collector obtained a specimen in the neighborhood of Khun Tan, April 1914.

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[86] Journ. Federated Malay States Mus., vol. 2, p. 52, 1905.

[87] Ibis, 1910, p. 673.

[88] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 153, 1916.

I have examined no specimens from Java, the type locality of the nominate form.

The form ranges from the Malay States, Peninsular Siam, to the Mergui Archipelago (Elphinstone Island), and it has once been taken as far north as Khun Tan, Siam.

The birds from Borneo, Sumatra, and Pulo Mata Siri, Java Sea, have each been provided with a name.

SPHENOCERCUS SPHENURUS SPHENURUS (Vigors)

Vinago sphenura VIGORS, Proc. Zool. Soc. London, 1831, p. 173 (Darjiling).

One male, Doi Nangka, November 19, 1930.

This specimen is smaller than specimens from Yunnan (*S. s. yunnanensis*).

Deignan [89] took a specimen on Doi Sutep, 5,000 feet, in November. De Schauensee [90] found it not uncommon there and at Chiengdao between 3,000 and 5,000 feet on his third expedition.

The present form ranges from Kashmir to Assam, south to the Shan States, Tenasserim, and northern Siam.

LEUCOTRERON JAMBU (Gmelin)

Columba jambu GMELIN, Systema naturae, vol. 1, pt. 2, p. 784, 1789 (Java).

Two males and one female, Bangnara, Patani, Peninsular Siam, July 4–15, 1926.

There are two males and one female in the United States National Museum collected by Dr. W. L. Abbott at the Rumpin River, Pahang, June 10 and 12, 1902.

August Müller [91] records four skins secured in Malacca, probably purchased. These were thought by Robinson and Kloss [92] to have come from the mainland opposite Puket, but this is doubtful. Robinson [93] does not mention Peninsular Siam in his latest book and was evidently aware of this error in the earlier work.

The species ranges from Perlis in the western Malay States to Patani in the southern Peninsular Siamese States, and from thence south to Singapore, Tioman Island, Sumatra, Borneo, Banka, and Billiton. It probably has a wider range than the above would indicate and performs local migrations, probably due to the ripening of certain fruits.

The species is easily distinguished from all other pigeons. The males are green above and white below; the forepart of the head and throat to the posterior border of the eye carmine-red; the chin a brownish black; the chest with a large eosine pink spot; the under tail coverts brick red; outer primary much attenuated at the tip. The female has the chest and neck green; the forepart of the head aster purple, the chin slightly darker. Wing in male, about 144 mm; the female is somewhat smaller.

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[89] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 166, 1931.

[90] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 272, 1934.

[91] Die Ornis der Insel Salanga, p. 79, 1882.

[92] Journ. Nat. Hist. Soc. Siam, vol. 5, no. 1, p. 31, 1921.

[93] The birds of the Malay Peninsula, vol. 2, p. 11, 1928.

DUCULA BADIA GRISEICAPILLA Walden

Ducula badia griseicapilla WALDEN, Ann. Mag. Nat. Hist., ser. 4, vol. 16, p. 228, 1875 (Karen Hills).

One male, Doi Angka, 6,000 feet, December 4, 1928; two males, and two females, Khun Tan, 4,000 feet, August 27, 1930, and February 14 and 29, 1932; one female, Pang Meton (Doi Nangka), May 3, 1931; one male, Doi Kinchong, January 1, 1933; one male, Kao Pae Pan Nam, Lamsak, February 5, 1934.

The male from Doi Kinchong has the pileum and cheeks washed with vinaceous as in *D. b. obscurata*, but the back is not so dark.

Gairdner [94] records this pigeon from Ratburi and Petchaburi; Chasen and Kloss [95] from the Raheng District, western Siam; Deignan [96] reports it common on Doi Sutep, from 3,500 to 5,500 feet.

The form ranges from eastern Bengal to Assam, Burma, western and northern Siam, and east probably to Tonkin and Laos. It is a mountain species. In Siam it has been found only in the mountains of the southwestern, western, and northern parts.

In Sumatra and the Malay States *Ducula badia badia* (Raffles) is found.

DUCULA BADIA OBSCURATA Conover

Ducula badia obscurata CONOVER, Proc. Biol. Soc. Washington, vol. 43, p. 1, 1930 (Krat, southeastern Siam).

One female, Kao Seming, Krat, October 14, 1928.

This subspecies is easily distinguished from *D. b. griseicapilla* in having the pileum and cheeks washed with vinaceous instead of gull gray. Chasen and Kloss [97] state, however, that they can see no material differences among specimens from north and west Siam to south Annam. With only one specimen from southeastern Siam, however, I do not like to pass judgment.

MUSCADIVORES AENEUS AENEUS (Linnaeus)

Columba aeneus LINNAEUS, Systema naturae, ed. 12, p. 283, 1766 (Moluccas, error; Hartert and Goodson [98] say the type locality may be considered Flores; Oberholser [99] states, "We . . . now designate Borneo as the type locality").

Dr. W. L. Abbott collected a male on the Rumpin River, Pahang, July 12, 1902, and a male on Pulo Bintang, Rhio Archipelago, August

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[94] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 515, 1915.

[95] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 155, 1928.

[96] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 166, 1931.

[97] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 233, 1932.

[98] Nov. Zool., 1918, p. 346.

[99] U. S. Nat. Mus. Bull. 159, p. 27, 1932.

7, 1902. These two males are somewhat larger than more northern birds and agree fairly well with Bornean specimens but are probably on the whole a trifle smaller. The designation of Borneo as the type locality is rather far fetched. I hardly think specimens would have been received from there in Linnaeus's time. Hartert and Goodson's designation of Flores has precedence. No specimens have been available from Flores for examination.

Two males from Java are rather smaller. One male from Rumpin River, Pahang, measures: Wing, 245; tail, 138 mm. One male from Pulo Bintang, Rhio Archipelago: Wing, 237; tail, 149 mm. Two males from Java: Wing, 225–235; tail, 137–149 mm. Six males from Borneo: Wing, 237–254 (247.7); tail, 141–150 (146.6) mm.

This form is said to occur eastward from Borneo to the island of Flores; also the southern portion of the Malay Peninsula and Sumatra.

MUSCADIVORES AENEUS SYLVATICUS (Tickell)

Columba sylvatica Tickell, Journ. Asiat. Soc. Bengal, vol. 2, p. 581, 1833 (Borabhum and Dholbhum, India).

One male and one female, Nakon Sritamarat, Peninsular Siam' September 10, 1924, and September 30, 1926; one male and four females, Koh Tao, January 1–2, 1927, September 20–21, 1928; one male and one female, Kao Soi Dao, Trang, January 7, 1934; one male, Ban Den Muang, February 25, 1929; one male, Ban Nakae, March 4, 1929; one female, Nong Khor, November 14, 1924.

Dr. W. L. Abbott collected the following: One male and one female, Prahmon, Trang, March 24 and April 3, 1896; one female, Pulo Adang, Butang Islands, December 15, 1899; four males and three females, Mergui Archipelago (Chance Island, December 29, 1899; St. Luke Island, January 19, 1900; Sullivans Island, January 30, 1900; Domel Island, February 25, 1900, and January 28, 1904). He gives the color of the soft parts as: Iris deep red; bill leaden blue; cere dull purple; orbital ring dull purple red; feet deep livid purple, claws bluish horn.

This form differs from *M. aeneus aeneus* in being somewhat smaller and more bronzy above and in having a more vinaceous wash on the breast, pileum, and cheeks. The latter character is very variable; in some specimens it is almost lacking, while in others it is very pronounced. It also occurs in Bornean birds.

An immature female about one-half grown was taken by Dr. Smith on Kao Tao on September 20. It resembles the adult, except the pileum and the hindneck are mouse gray; the underparts pale mouse gray, without any vinaceous tinge; the tail feathers are much narrower than in the adult.

Eleven males from Peninsular and eastern Siam and the Mergui Archipelago measure: Wing, 225–243 (233.7); tail, 139.5–157 (146) mm. Twelve females from Peninsular Siam, the Mergui Archipelago, and southeastern Siam: Wing, 222–238 (230); tail, 127–147 (141) mm. A male from Rutland Island, Andamans, collected by Dr. W. L. Abbott, January 16, 1901, is somewhat larger than any specimen of *M. a. sylvaticus* measured by me: Wing, 252; tail, 158 mm. It may be a stray of *M. aeneus aeneus*.

A female collected by Dr. W. L. Abbott on St. Luke Island, Mergui Archipelago, January 19 (No. 172932) has three white tail feathers, one of the central pair and the next feather to it on the left side, and the one next to the other central feather on the right side. Three of the other tail feathers have spots of white or light gray of varying degree at the tip. One of the upper tail coverts has a white tip.

A female (No. 308043), collected by Dr. Smith at Nakon Sritamarat, September 30, has one of the upper tail coverts pure white.

Specimens of this species with dark-gray hindnecks and pileums usually have shorter wings and in my opinion are more or less immature. I have rejected them in my averages.

The range of this form extends from northern India (Nepal and Sikkim) south through Assam and Burma to southern Tenasserim, northern Siam, and Peninsular Siam as far as the Malay States. It is found on most of the islands off the west and east coasts of Peninsular Siam and in the Gulf of Siam.

Birds of this genus usually occur on islands off the coast, rather than on the mainland far from the sea. I have seen few records for northern Siam. Gyldenstolpe[1] records it from there; Robinson[2] records it from Nam Khum, northeastern Siam; Chasen and Kloss[3] record it from the Raheng District, western Siam; Gyldenstolpe[4] cites it for Bang Hue Pong and Hat Sanak, southwestern Siam; Kloss[5] lists it from Lat Bua Kao, eastern Siam; Baker[6] records two males from Krabin, central Siam; Robinson[7] from the islands of Koh Kut, Koh Mehsi (East Island), and Koh Klum, southeastern Siam, and from Terutau and Koh Muk, Trang,[8] as well as from Koh Pennan, off Bandon[9]; Robinson and Kloss[10] list specimens from Pulo Mohea (North island), Koh Pipidon, Koh Yam Yai, and Koh Yam Noi, western Peninsular Siam; they had previously given it from Telok Poh and Pulau Panjang, Ghirbi Bay, on the same coast.[11]

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[1] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 66, 1913.

[2] Ibis, 1931, p. 324.

[3] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 155, 1928.

[4] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 155, 1916.

[5] Ibis, 1918, p. 83.

[6] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 31, 1920.

[7] Ibis, 1915, p. 723.

[8] Journ. Federated Malay States Mus., vol. 7, p. 136, 1917.

[9] Journ. Federated Malay States Mus., vol. 5, p. 141, 1915.

[10] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 31, 1921.

[11] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 90, 1919.

MYRISTICIVORA BICOLOR BICOLOR (Scopoli)

Columba bicolor Scopoli, Deliciae florae et faunae insubricae, pt. 2, p. 94, 1786 (New Guinea).

Dr. W. L. Abbott collected a male on South Twin Island, Mergui Archipelago, January 27, 1900.

This is a species that usually occurs on small islands off the coast of larger land masses. There are few records for Siam, as the islands probably have not been visited at the proper season. Robinson and Kloss [12] record it from the outlying islands of the Langkawi Group; strictly speaking, this is not a Siamese record, but it is just over the line. Williamson [13] reports it from Chumpon Bay, Peninsular Siam; Forty [14] gives it for Koh Phai, Inner Gulf of Siam; while Robinson and Kloss [15] say the species also occurs on the Koh Sichang Group.

The form ranges from small islands off the coast of southern Burma, the Andamans, and Nicobars, through the Philippines and Sunda Islands to New Guinea.

CALOENAS NICOBARICA NICOBARICA (Linnaeus)

Columba nicobarica Linnaeus, Systema naturae, ed. 10, p. 164, 1758 (Nicobar Islands).

Three males and four females, Koh Tao, December 27–31, 1926, and September 18–20, 1928.

Dr. W. L. Abbott collected two males on Pulo Nipis, Butang Islands, western Malay Peninsula, December 13, 1899; and a male and female on South Twin Island, Mergui Archipelago, January 27, 1900. He gives the soft parts as: Iris brownish gray; bill and cere black; feet dark purple, soles yellow, claws horny yellow.

Wherever this bird is found, and it has quite an extensive range, it seems to occur on the small islands off the main land mass or larger islands. Robinson and Kloss [16] report it for Terutau; and later [17] they give it as common at certain seasons on the islands off the west coast of Siam; on the east coast it occurs on the smaller islands of the Pahang and Johore Archipelago and the Redang group off Trengganu.

The species ranges from the Andaman and Nicobar Islands to the Mergui Archipelago and small islands off the Malay Peninsula, Sumatra, Cambodia, and Cochinchina, to the Philippines, and southward to the Solomon Islands. *C. n. pelewensis* Finsch occurs in the Pelew Islands.

CHALCOPHAPS INDICA INDICA (Linnaeus)

Columba indica Linnaeus, Systema naturae, ed. 10, p. 164, 1758 (India orientale).

One immature female, Pak Chong, eastern Siam, February 23, 1924; one male, Nong Khor near Sriracha, March 3, 1926; one male,

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[12] Ibis, 1910, p. 674.

[13] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 61, 1916.

[14] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 254, 1917.

[15] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 34, 1921.

[16] Ibis, 1910, p. 675.

[17] Journ. Nat. Hist. Soc. Siam. vol. 5, p. 37, 1921.

Pang Sok, eastern Siam, August 26, 1926; two males, Pran, southwestern Siam, May 28, 1928, and April 2, 1931; one male, Koh Kut, May 21, 1929; one male, Huey Yang, Kao Luang, Nakon Sritamarat, October 6, 1930; one female, Hin Lap, eastern Siam, September 30, 1932; one female, Sobpung, December 22, 1932; one male and one female, Khonka Valley, January 26, 1933.

Dr. W. L. Abbott collected three males in Trang (Lay Song Hong, August 31, 1896; near Kao Nok Ram, January 4, 1899, and Prang, January 20, 1899). He gives the soft parts as: Iris dark brown; bill coral-red, base and cere purple; feet purple, soles and back of tarsi whitish.

This pigeon has a wide range. It occurs practically all over India and extends east to Siam, southern China, Indo-China, the Malay Peninsula, the Philippines, and the Sunda Islands. It has been recorded fairly regularly over Siam proper and down Peninsular Siam to the Malay States; also on many of the islands off the coast of Peninsular and southeastern Siam.

COLUMBA LIVIA INTERMEDIA Strickland

Columba intermedia Strickland, Ann. Mag. Nat. Hist., ser. 1, vol. 13, p. 39, 1844 (India).

One male, Nong Mong, Muang Krabin, August 27, 1925; one female, Koh Chang, January 7, 1926.

Gyldenstolpe[18] says specimens of this species have been recorded from several localities in central and southwestern Siam and that it has been obtained on the island of Puket; Deignan[19] reports it at Chiengmai in flocks often found feeding far from houses and acting like wild birds; Baker[20] records it from Pak Chong, eastern Siam. Most writers regard the form in Siam as the domestic pigeon gone wild; even so, it seems to have spread rather widely over the whole country, except Peninsular Siam, but not in great numbers.

COLUMBA PUNICEA Tickell

Columba (*Alsocomus*) *puniceus* Tickell, *in* Blyth, Journ. Asiat. Soc. Bengal, vol. 11, p. 461, 1842 (Chyebassa, India).

One male, Muek Lek, April 7, 1933.

This specimen is much deeper in color both above and below than a female from Koh Lak, the only specimen available for comparison. The third primary in both wings is being renewed; the new feather is about half grown.

Robinson[21] records it from Pulo Terutau and states that Hume had recorded three specimens from Salanga; these specimens are now in the

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[18] Ibis, 1920, p. 741.

[19] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 167, 1931.

[20] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 32, 1920.

[21] Journ. Federated Malay States Mus. vol. 4, p. 129, 1909.

British Museum. Gairdner[22] reports it from the Ratburi and Petchaburi Districts, Gyldenstolpe[23] records a male from Hue Sai, January 1915. Robinson[24] reports it common on Koh Muk, Trang, during the three days their party was there; it came in at dusk to roost in the tall mangroves, probably from the mainland.

Kloss[25] records it from Koh Lak; Robinson and Kloss[26] from Junkseylon (Salanga or Puket); Williamson[27] records it from Koh Phra, Inner Gulf of Siam. Thus, it has been taken from Trang northward in the Peninsula to the southwestern part and thence to the southeastern and eastern part of the country.

The species ranges from eastern Bengal to Assam, Burma, Peninsular and eastern Siam and east to Laos and south Annam. In Siam it does not appear to be a common species, and it is uncertain whether it is resident in the Peninsula.

The species is often put in a separate genus (*Alsocomus*), but the characters relied upon in doing so, it seems to me, do not warrant such action. If such slight characters are recognized, the genus *Columba* as generally used would have to be broken up into numerous genera, without a consequent gain.

STREPTOPELIA CHINENSIS TIGRINA (Temminck)

Columba tigrina Temminck, Histoire naturelle générale des pigeons et des gallinacés, vol. 1, p. 94, pl. 43, 1808–11 (type locality as fixed by Hartert, Java).

Two males, Ban Nam Kien, Nan, April 21–22, 1930; one male, Rayasothon, March 23, 1929; one male, Ban Nakae, November 4, 1929; one male, Mae Hong Sorn, January 6, 1933; one male, Mekhan, February 1, 1932; three males, Aranya, July 13–17, 1930; one male, Knong Phra, April 14, 1929; one male and one female, Bangkok, January 17 and February 7, 1924; two females, Bung Borapet, June 28, 1932; one, not sexed, Muang Kanburi, April 9, 1928; one male, Nong Mong, Krabin, August 28, 1925; one male, Sikeu, near Korat, February 17, 1926; one male, Mong Khor, near Sriracha, September 28, 1925; one male, Klong Yai, Sriracha, July 24, 1932; one male and one female, Pak Chong, December 9, 1929; one male, Tha Chang, near Pak Chong, November 23, 1925; two males and one female, Koh Chang, January 7–10, 1926; one female, Pran, April 3, 1931; one female, Koh Pangan, July 31, 1931; one male and one female, Nakon Sritamarat, September 26, 1926, and March 16, 1929; one male and one female, Patalung, July 9, 1929.

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[22] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 39, 151, 1914–15.

[23] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 151, 1916.

[24] Journ. Federated Malay States Mus., vol. 7, p. 136, 1917.

[25] Ibis, 1918, p. 83.

[26] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 90, 1919.

[27] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 31, 1918.

The following specimens received from Dr. W. L. Abbott are in the United States National Museum: One male and one female, Tanjong Kalong, Singapore, October 15 and 20, 1899, four males and one female, Trang (Prahmon, April 13, 1896; Tyching, April 23–June 28, 1896; Trang, January 1, 1899); three males and one female, Tenasserim (Tanjong Badak, January 12; Bok Pyin, February 12; and Victoria Point, November 24, 1900).

Dr. Abbott gives the color of the soft parts as: Male—Iris orange; bill and cere black; feet red, pinkish purple, or dull pink. Female—iris pinkish orange (one specimen).

This rather large series shows little variation according to latitude, but there is considerable individual variation. Some specimens are much darker than others, both above and below, but the form does not seem to be confined to any one section of the country. Two males and a female from Java can be matched from the Malay Peninsula, and these again can be matched by specimens from northern or eastern Siam. The smallest specimen measured is a male from Singapore: Wing, 142.5; it also appears to be somewhat darker below, but it is a single specimen and it would be better to treat the differences as individual for the present. Measurements for the birds examined are given in table 2.

TABLE 2.—*Measurements of* Streptopelia chinensis tigrina

Specimens	Wing	Tail	Culmen
	Mm	*Mm*	*Mm*
2 males from Java	147–148. 5	135–143	16. 5–17
6 males from Malay Peninsula and 2 males from southern Tenasserim	142. 5–161 (152)	123–141 (134. 3)	15–17 (15. 9)
9 males from eastern and southeastern Siam	146–157 (150. 9)	123–142 (132. 5)	15–17 (16)
10 males from northern Siam	145–160 (152.3)	127–154 (138. 8)	15–17 (16)

This form has a wide range, extending from the Moluccas, Celebes, Borneo, Java, Banka, Sumatra, through the Malay Peninsula to eastern Bengal, Burma, Siam, and the indo-Chinese countries. In Siam it occurs commonly throughout the country and on many of the islands off the coast.

Herbert [28] reports it nesting in the vicinity of Bangkok and says that eggs may be found certainly during the first nine months of the year and that it is supposed to breed throughout; the clutch consists of two eggs. He gives a description of the nest and eggs.

A number of other nominal races have been named from China and Formosa.

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[28] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 334, 1926.

STREPTOPELIA ORIENTALIS MEENA (Sykes)

Turtur meena SYKES, Proc. Zool. Soc. London, 1832, p. 149 (Deccan).

Two males, Chiengdao, February 1, 1932; one male, Mae Hong Sorn, January 7, 1933.

Gyldenstolpe[29] recorded one shot at Khun Tan, but not saved. Deignan[30] reports this dove as rare at Chiengmai, where a native brought him a live bird that had been snared on the plain in May; later he states it had been found there in March, May, and August.[31]

The form ranges from Bengal and Assam to Burma, Tenasserim, and northern Siam.

OENOPOPELIA TRANQUEBARICA HUMILIS (Temminck)

Columba humilis TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 44, pl. 259, March 1824 (Bengal and Luzon).

One male and one female, Bangkok, September 18, 1923, and April 23, 1924; one male and one female, Nong Mong, Muang Krabin, August 26, 1925; one female, Muang Kanburi, April 10, 1928; one male, Sam Roi Yot, November 9, 1932.

Gyldenstolpe[32] records it from Khun Tan, Sap Tue, and Koh Lak and states that it is very common in the southwest but less so in northern Siam; Herbert[33] states that it breeds in the vicinity of Bangkok from March to August, the clutch consisting of two eggs; Chasen and Kloss[34] record it from the Raheng District; Deignan[35] found it common at Chiengmai; Robinson and Kloss[35a] give Pakchan as the southern limit of this dove in Peninsular Siam; elsewhere it seems to be generally distributed throughout the country.

This form is supposed to range from Dauria and China south to Assam, Burma, Siam proper, Indo-China, and the Philippines, but it hardly seems possible that it covers so wide a territory.

MACROPYGIA UNCHALL TUSALIA (Blyth)

Columba (Macropygia) tusalia BLYTH, Journ. Asiat. Soc. Bengal, vol. 12, p. 936, 1843 (Darjeeling).

One male and two females, Doi Angka, 6,200–8,400 feet, December 5–7, 1928; one male and one female, Doi Nangka, November 3 and 10, 1930; one female, Khun Tan Mountains, 4,300 feet, May 12, 1933; one immature female, Doi Hua Mot, August 21, 1934.

The typical *Macropygia unchall unchall* (Wagler) is confined to Java and the southern Malay States, and it is very doubtful if *tusalia* should be made only a race of *unchall*; probably it should be accorded specific rank. The males of the two forms are quite distinct, the head and hindneck in *tusalia* being darker and the iridescence purple instead of green. The chestnut bars above are narrower and darker. The ranges are widely separated by territory where no forms of the species occur.

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[29] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 149, 1916.

[30] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 175, 1931.

[31] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 86, 1936.

[32] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 150, 1916.

[33] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p 334, 1926.

[34] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 156, 1928.

[35] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 167, 1931.

[35a] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 35, 1921.

Gyldenstolpe [36] reports it extremely rare in Siam and at that time this form had been taken only at Khun Tan; Deignan [37] records it as uncommon on Doi Sutep at 3,500 to 5,500 feet. Chasen and Kloss [38] record a single male from Hue Pandeng, Raheng, and say it is rather small for typical *tusalia*; wing of their male is given as 186 mm. This latter specimen is now in the United States National Museum and, according to my measurement, the wing is 190 mm. It agrees with Dr. Smith's males from farther north. The wing of the Doi Angka male measures 190 mm. That of the Doi Nangka male measures 188 mm. There are no topotypical specimens of the form available for comparison. De Schauensee [39] took a male and female at Chiengdao.

This is a mountain form and extends from the Himalayas through northern Siam to Laos, Tonkin, and Annam. So far there appears to be no authentic record from the Malay Peninsula.

MACROPYGIA RUFICEPS ASSIMILIS Hume

Macropygia assimilis HUME, Stray Feathers, vol. 2, p. 441, 1874 (northeast of Moulmein, Tenasserim).

One male and one female, Khun Tan, 4,000 feet, February 29, 1932.

Williamson [40] records it from Raheng, 1,500 feet (May), and from Muang Wang; Chasen and Kloss [41] record a series taken by Gairdner in the Raheng District, three of which were afterward sent to the United States National Museum; Deignan [42] took it in March on Doi Sutep, 5,500 feet; and de Schauensee [43] later secured a male there at 3,500 feet.

The form ranges from Pegu to Muleyit, the South Shan States, and northern and western Siam.

GEOPELIA STRIATA STRIATA (Linnaeus)

Columba striata LINNAEUS, Systema naturae, ed. 12, p. 282, 1766 (India orientali; Java).

One adult male, one adult female, and one immature female, (little over half grown) Bangkok, July 3 and September 19, 1923, and October 21, 1926; one adult male, Koh Pangan, July 31, 1931; one adult male, Koh Samui, August 7, 1931.

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[36] Ibis, 1920, p. 742.

[37] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 167, 1931.

[38] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 156, 1928.

[39] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 273, 1934.

[40] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 31, 1918.

[41] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 156, 1928.

[42] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 167, 1931.

[43] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 273, 1934.

The following specimens collected by or received from Dr. W. L. Abbott are in the United States National Museum: Two females, Trang (Prahmon, April 2, and Tyching, June 27, 1896); one male, Kemamun River, Trengganu, October 2, 1900; two females, Tanjong Kalong, Singapore, January 27 and March 20, 1900. He describes the soft colors as: Iris blue or bluish white; naked skin about orbit blue or greenish blue; bill and cere leaden blue; front of tarsus and top of toes dark purple, back or tarsus and soles fleshy.

Ogilvie-Grant[44] records it from Patani; Robinson[45] from Pulo Lontar; Baker[46] from Klong Wang Hip; Robinson and Kloss[47] from Nong Kok, Ghirbi. Robinson and Kloss[48] also state that it is very common in open spaces in Peninsular Siam, to which all the above citations pertain, the bird becoming scarcer farther north. Herbert[49] says that it is supposed to have been introduced at Bangkok, where it is now thoroughly established; a nest and eggs were found at the Sports Club in June and another at Supatoom. Deignan[50] found it common at one locality on the plain at Chiengmai. Later[51] he found it not uncommon at Chiengmai, where it was said to have been introduced from Java.

The form ranges from Java to the Malay States and northward through Peninsular Siam to southern Tenasserim and northern Siam.

Family PSITTACIDAE: Parrots, Macaws

PSITTACULA EUPATRIA SIAMENSIS (Kloss)

Palaeornis eupataria siamensis Kloss, Journ. Nat. Hist. Soc. Siam, vol. 2, p. 219, 1917 (Lat Bua Kao, eastern Siam).

One male, Chomtong, northern Siam, November 29, 1928; one immature male, Nakon Panom, March 8, 1929; one female, Konken, March 21, 1929; one male, Noan Wat, February 14, 1929; one male and one female, Muang Kanburi, April 7, 1928; one male, Vichienburi, February 27, 1934.

I am unable to decide whether there is more than one form of this parrot occurring in Siam, as my material is much too scanty. The male from Chomtong is a fully adult bird, and the nape is washed strongly with pale caerulean blue and the neck band is grenadine pink; in the male from Noan Wat the nape is much more lightly washed with a lighter blue and the neck band is a lighter pink, while in the male from Kanburi and Vichienburi, the blue on the nape is practically absent and the neck band is a little deeper than grenadine. The latter are apparently adult. These differences may be individual.

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[44] Fasciculi Malayenses, pt. 3, p. 121, 1905.

[45] Journ. Federated Malay States Mus., vol. 7, p. 137, 1917.

[46] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 32, 1920.

[47] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 90, 1919.

[48] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 36, 1921.

[49] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 335, 1926.

[50] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 167, 1931.

[51] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 86, 1936.

The exact range of this form is rather uncertain. It apparently extends from western and northern Siam through eastern Siam to lower Laos, Cambodia, and Cochinchina.

Chasen and Kloss [52] record it from the Raheng District. A number of authors have recorded it from northern Siam, and the type came from eastern Siam. Dr. Smith's specimens from Kanburi come from about as far to the southwest as the form has yet been taken in Siam. De Schauensee [53] obtained a specimen at Chiengmai and another at Metang, which he thinks represents another subspecies but does not name it.

PSITTACULA CYANOCEPHALA BENGALENSIS (Forster)

Psittacus bengalensis Forster, Indische Zoologie, p. 40, 1781 (Bengal).

One male and two females, Muang Kanburi, April 8–11, 1928 one female, Pran, June 1, 1928; one female, Bung Borapet, June 24 1932.

The range of this form is from Nepal, Sikkim, eastern Assam, Yunnan, and Burma south to Siam and Tenasserim and east to Laos, Cambodia, Cochinchina, Annam, and southern China. It seems pretty well distributed over the whole of Siam proper. Kloss [54] has recorded it from Koh Lak in southwestern Siam, which seems to be about the limit of its range in that direction.

PSITTACULA HIMALAYANA FINSCHI (Hume)

Palaeornis finschi Hume, Stray Feathers, vol. 2, p. 509, 1874 (Kollidoo, Burma).

One immature male and one female, Prae, April 28, 1930; one male and one female, Doi Buak Hua Chang, December 25, 1932; one female, Melang Valley, December 31, 1932; one female, Muang Pai, December 29, 1932; one male, Hang Nor Wu, January 14, 1933; one male, Lomkao, February 20, 1934. Dr. Smith also took a male at Chong Yam, Burma, January 15, 1933.

The United States National Museum has a large series from the mountains of Yunnan, but the majority are in molt or are immature and not comparable. The only full-plumaged male in the series does not differ materially from the northern Siamese specimens, except the tips of the middle tail feathers are a clearer yellow, without the pinkish cast of Dr. Smith's birds. I rather think this pinkish wash fades out with age.

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[52] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 164, 1928.

[53] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 259, 1934.

[54] Ibis, 1918, p. 90.

This form ranges from Assam to Burma, Yunnan, Laos, Annam, and northern Siam and south to Tenasserim. It is a mountain form and has so far been taken in the northern mountain districts only, where it is not uncommon, according to de Schauensee.[55]

PSITTACULA ALEXANDRI FASCIATA (Müller)

Psittacus fasciatus Müller, Natursystem, Suppl., p. 74, 1776 (Pondicherry).

Three females, Doi Angka (lower slopes), December 9, 1928; six males and three females, Ban Nam Kien, Nan, April 18–23, 1930; one male, Mekhan, February 1, 1932; one female, Sobpung, December 21, 1932; two males and one female, Bangkok, March 4 and October 22, 1924, October 28, 1925; three males and two females, Bung Borapet, June 21–29, 1932; two males, Lomkao, February 20, 21, 1934; one male, Wang Kien, Kanburi, March 12, 1934; two males and four females, Muang Kanburi, April 9–12, 1928, September 24, 1929; three males and two females, Pak Chong, May 4 and 8, and December 20, 1926; one male and one female, Chantuk, June 12, 13, 1934; one female, Pang Sok, August 24, 1926; one female, Ban Nong Dern Ta, March 2, 1929; one male, Ban Foe Hilom, March 3, 1929; one male, Knong Phra, April 15, 1929; one female, Lat Bua Kao, August 11, 1929; three males, Nong Mong, Krabin, August 22–23, 1925; one male and one female, Sakeo, near Krabin, May 2, 1928; two males and one female, Nong Khor, Sriracha, November 19, 1926, February 7 and 9, 1927; two males and one female, Hupbon, May 25, 1925, November 8 and 15, 1931; two males and one female, Nong Yang, November 6, 20, 1931; one female, Ban Tarn Dam, March 6, 1930; one male, Kao Seming, Krat, January 2, 1930.

Dr. W. L. Abbott collected 10 adult males, one immature male, and six females in Tenasserim (Bok Pyin, February 12–13, 1900; Telok Besar, November 26, 1900; Champang, December 14, 1903; Boyces Point, February 12, 1904).

Dr. Abbott gives the color of the soft parts as follows: Male—upper mandible red, horn yellow at the tip, lower mandible dark horn brown; iris in two rings, inner narrow and green, outer yellow; feet pale green. The female has both the upper and lower mandibles black.

This is a very variable form. The sexes are much alike; the principal difference is the red upper mandible and dark brown lower mandible in the male. The female has the bill wholly black. Several young in Dr. Smith's series have the bill wholly red. They are all marked males, except one, and this might be wrongly sexed. The onionskin pink of the chest of the female is washed in the male with grayish violet-blue of varying depths of color.

The range of the form is an extensive one, occurring from Kuman to East Assam, eastern Bengal, Burma, and Yunnan south to Siam and Tenasserim and east to Laos, Cambodia, Annam, Tonkin, and South China. It occurs all over Siam except the Peninsular part. Robinson and Kloss[56] record one from Koh Pra Tung, Takuapah Inlet, western Peninsular Siam, and state that it constitutes the southernmost record in this direction.

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[55] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 259, 1934.

P. a. alexandri (Linnaeus) is confined to Java and southern Borneo; no specimens from the latter locality have been examined. Javan specimens are quite distinct from the mainland form, and it is very doubtful if they should be regarded as forms of the same species. There is a long gap between the ranges also. Three other forms have been separated—one from the Andamans, one from Simalur, and one from Nias.

PSITTACULA LONGICAUDA LONGICAUDA (Boddaert)

Psittacus longicauda Boddaert, Table des planches enluminéez d'histoire naturelle, p. 53, 1783 (Malacca).

Dr. W. L. Abbott collected one male and one female, Rumpin River, Pahang, June 11, 13, 1902; one male, Singapore Island, May 28, 1899.

He gives the colors of the soft parts of the male from Singapore as: Iris in two rings, the outer pale yellow, the inner green; upper mandible red, pale brownish at tip; lower mandible horn brown; cere green; feet greenish leaden. He says it is fairly common on the north side of the mainland, going about in pairs or small flocks of 4 to 10 and up to 30 individuals.

This species ranges from Nias, Sumatra, Billiton, and Banka to the southern Malay Peninsula, and Borneo.

Robinson and Kloss[57] state that probably this parrot will be found in the southern part of Patani, as Bonhote has recorded it from Ulu Selama in North Perak.

This is distinguished from the other species of the genus occurring in Siam by having the crown green, cheeks and hindneck geranium pink, and two broad black malar stripes in the male; in the female the malar stripes are dark green, and there is no pink band across the hindneck.

PSITTINUS CYANURUS CYANURUS (Forster)

Psittacus cyanurus Forster, Faunula Indica, p. 6, 1795 (Malacca).

Dr. W. L. Abbott collected one immature male, one adult female, and two immature females at Lay Song Hong, Trang, Peninsular Siam, November 24 and December 10, 1896.

Dr. Abbott describes the color of the soft parts as follows: Male (no. 180126, East Sumatra)—upper mandible red, tip horn brown, lower mandible horny brown; cere dark brown with a greenish tinge;

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[56] Journ. Nat. Hist. Soc. Siam, vol. 5, no. 2, p. 116, 1923.

[57] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 116, 1923.

iris pale yellow with an inner circle dark green. Female—bill horn brown, dark above. In the adult female from Trang the iris is given as white and the feet pale green.

The range of the form is from middle Tenasserim through Peninsular Siam to Singapore, Sumatra, Banka, and Borneo.

It is evidently not a common bird in the Malay Peninsula and is erratic in its wanderings. It may be common at times and then disappear. Robinson and Kloss [58] state that the only specimens on record from Peninsular Siam are two males and a female from Biserat, Jalor, Patani; they had specimens also from Pelarit, Perlis. Mr. Williamson's collector obtained two females and a male at Naihoot near Langsuan.

Psittinus cyanurus pontius Oberholser is confined to the Mentawi Islands; and *Psittinus abbotti* Richmond, a related but very distinct species, is found on Simalur, islands off the west coast of Sumatra.

LORICULUS VERNALIS VERNALIS (Sparrman)

Psittacus vernalis Sparrman, Museum Carlsonianum, 1787, p. 29 (no locality [59]).

One male, Ban Nam Kien, April 21, 1930; one male, Ban Tarn Dam, southeastern Siam, March 6, 1930; one male, Sriracha, November 7, 1924; five males and two females, Koh Chang, January 5–13, 1926, March 10, 1930; one female, Wat Kiriwong, Nakon Sritamarat, July 25, 1928.

Dr. W. L. Abbott collected two females in Trang (Prahmon, March 15, 1896; Tyching, June 18, 1896) three females in Tenasserim (Bok Pyin, February 14 and 17, 1900; Champang, December 13, 1903); and five males on Sullivan Island, Mergui Archipelago, February 2–4, 1900. He records the colors of the soft parts as follows: Bill horny orange; iris grayish white; feet dull yellow.

The series from Sullivan Island average more yellowish on the chest and back than the Siamese birds; unfortunately I have only one male specimen from India for comparison.

The form ranges from Sikkim to Annam, eastern Bengal, Burma, Andamans, and all Siam, east to Cambodia, Cochinchina, Laos, Annam, and Tonkin. In Siam proper it ranges pretty much all over the country and down Peninsular Siam as far as Klong in Selangor, according to Robinson and Kloss.[60]

Deignan [61] states that it ascends Doi Sutep to 3,500 feet.

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[58] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 114, 1923.

[59] Stuart Baker, The Fauna of British India, Birds, ed. 2, vol. 4, p. 217, 1927, gives Cachar; Delacour and Jabouille, Oiseaux l'Indochine Français, vol. 2, p. 160, 1931, Nepaul; both very unlikely localities at this early date.

[60] Ibis, 1911, p. 32.

[61] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 161, 1931.

Family CUCULIDAE: Cuckoos

CUCULUS MICROPTERUS CONCRETUS S. Müller

Cuculus concretus S. MÜLLER, Verhandelingen over de natuurlijke Geschiedenis der Nederlandsche overzeesche bezittingen . . . , p. 236, 1845 (Borneo).

Dr. W. L. Abbott collected a single male in Trang, February 24, 1899. He describes the soft parts as follows: Iris dark brown; bill black above, greenish beneath; orbital ring yellow; feet yellow.

This is a small dark race of *C. m. micropterus.* The male from Trang measures: Wing, 177; culmen, 23 mm.

Three males of *C. m. micropterus* from China measure: Wing, 208–209 (208.5) mm; culmen, 25–27 (26.3) mm. Three females: Wing, 207–214 (210.7); culmen, 25–27.5 (26.3) mm.

The United States National Museum contains also the following specimens of *C. m. concretus:* One male, Baguio, Benquet, Luzon, April 27, 1907; one female, Siak River, eastern Sumatra, January 3, 1907; one male, Tana Bala, Batu Islands, off western Sumatra, February 11, 1903; one immature, Malacca.

The form ranges apparently from Peninsular Siam to the Malay States, Sumatra, and adjacent islands, Java, Borneo, and the Philippines (Luzon). Dr. Abbott's specimen is the first record of *C. m. concretus* from Peninsular Siam, but the immature from Malacca brings up the question whether it is not the resident form in Peninsular Siam and farther south.

The specimen listed above from the Batu Islands is grayer above than the other three adults, but whether this difference is individual or geographic, I cannot tell. All four adults of *concretus* are darker above and considerably smaller than the series of six adults of *micropterus* from China. The measurement of the Trang specimen is given above. The other three measure: Male, Luzon—wing, 179; culmen, 26. Male, Batu Islands—wing, 188; culmen, 21. Female, Siak River, eastern Sumatra—wing, 194; culmen, 22 mm.

No specimens have been available from Borneo or Java for examination.

HIEROCOCCYX SPARVERIOIDES SPARVERIOIDES (Vigors)

Cuculus sparverioides VIGORS, Proc. Zool. Soc. London, 1832, p. 173 (Himalayas).

One male, Pak Chong, eastern Siam, February 18, 1924.

Dr. Smith gives the following note on the colors of the soft parts: Iris brownish yellow; bill black above, dark green below; legs yellow.

Gyldenstolpe[62] reports it rather rare at Khun Tan; Deignan[63] records it from Doi Sutep, 2,700–5,500 feet. Lowe[64] lists it from Um

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[62] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 102, 1916.

[63] Jour. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 159, 1931.

[64] Ibis, 1933, p. 477.

Pang, western Siam; de Schauensee[65] from Bangkok, March 1, and later[66] from the same place, Chiengmai, and Hua Mak; Stuart Baker[67] from Krabin; Robinson and Kloss[68] from Nong Kok, Ghirbi, and islet off Pulo Panjang; earlier[69] they had recorded it from Trang; Robinson[70] reports it from Pulo Dayang Bunting, Langkawi Group, and Pulo Lontar, also Ko Khan, Trang.

This large hawk cuckoo ranges in the Himalayas from Kashmir to eastern Assam and southern China as far north as the Yangtze; southward it reaches Tonkin, Annam, Cochinchina, Laos, Burma, Siam, and down Peninsular Siam to the Malay States, the Philippine Islands, Borneo, and Java. It is resident in southern China, but in the Yangtze Valley it migrates south in winter. Whether it is resident in northern Siam I do not know, but in Peninsular Siam and farther south it is probably only a winter visitor. It has been recorded from nearly all parts of Siam, but all the records seem to be of specimens taken in winter or early in spring.

HIEROCOCCYX FUGAX FUGAX (Horsfield)

Cuculus fugax Horsfield, Trans. Linn. Soc. London, vol. 13, p. 178, 1821 (Java).

Dr. W. L. Abbott collected an immature male at Tyching, Trang, July 22, 1896.

He describes the soft parts as: Bill black, greenish yellow at base; orbital skin greenish yellow; feet pale yellow.

Dr. Abbott took an older male on Pulo Bintang Rhio (Archipelago), August 6, 1902. The pileum and cheeks on this specimen were becoming slate gray; the upperparts, which are clove brown, have the buffy edges to the feathers much reduced; below there are no spots, only streaks of blackish edged with russet; both specimens have a small white patch at the base of the crest on the nape. Fourth outer primary a little longer than the third. Bill from nostril, 17 mm.

The Trang specimen is a younger bird about fully grown but still in an early immature plumage. The pileum and upper back are clove brown with narrow buffish fringes to the feathers; breast and belly with rhomboid blackish spots; cheeks sooty; chin white streaked with sooty; fourth outer primary a little longer than the third; bill from nostril, 18 mm.

According to Chasen and Kloss's[71] notes on this species, the above specimens belong to *H. f. fugax*. They say that it is the resident form in Peninsular Siam from Bandon south to the Malay States. They examined specimens from Bandon and Nakon Sritamarat in

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[65] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 573, 1928.

[66] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 257, 1934.

[67] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 438, 1919.

[68] Ibid., p. 98.

[69] Ibis, 1911, p. 40.

[70] Journ. Federated Malay States Mus., vol. 7, p. 157, 1917.

[71] Journ. Federated Malay States Mus., vol. 13, p. 278, 1927.

Peninsular Siam. It also occurs in Borneo and Java, as well as the Philippines.

Not much seems to be known concerning this form. As most of the records are faulty, I shall not give them.

HIEROCOCCYX FUGAX NISICOLOR (Blyth)

Cuculus nisicolor Blyth, Journ. Asiat. Soc. Bengal, vol. 12, p. 943, 1843 (Nepal).

Dr. W. L. Abbott collected one female, Kao Soi Dao, 1,000 feet, Trang, February 11, 1899.

This specimen has the streaked lower parts of the immature. The third outer primary is the longest; bill from nostril, 16.5 mm. These characters place it in this migratory form according to Chasen and and Kloss's notes.[72] They say they have examined specimens from Pak Chong, eastern Siam (May); Pulo Terutau (December); Pulo Rumpia, Sembilan Islands, Straits of Malacca (November, December); One Fathom Bank, Straits of Malacca (November); Pulo Jemar, Aroa Islands, Straits of Malacca (November); Pahang (December); Singapore (January).

The range of this form is Nepal, Sikkim, Assam, eastern Bengal, Burma, Siam, southern Annam, Pulo Condore, and south through Peninsular Siam to the Malay States. Probably it is only a summer resident in the north, migrating south in the winter season.

HIEROCOCCYX VAGANS (S. Müller)

Cuculus vagans S. Müller, Verhandelingen over de natuurlijke Geschiedenis der Nederlandsche overzeesche bezittingen . . . , p. 233, note, 1845 (Java).

One male, Tha Lo, Bandon, September 18, 1931; one male, Klong Yai, Sriracha, July 25, 1932.

August Müller [73] records a specimen taken on the island of Puket (Salanga); Stuart Baker [74] records one from Maprit, Peninsular Siam, in Herbert's collection; Robinson and Kloss [75] say that they have a few specimens from various parts of the Malay Peninsula but mention no specific localities.

Dr. Smith's specimen from Klong Yai, Sriracha, is the farthest east the species has been taken to date. It is larger than the Bandon male listed above, but only 2 mm more than the maximum given by Stuart Baker. The wing in the Bandon specimen measures 137.5 mm; that from Sriracha, 155 mm.

The species ranges from Tenasserim to southeastern and Peninsular Siam south to the Malay States, Java, and Borneo.

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[72] Journ. Federated Malay States Mus., vol. 13, p. 278, 1927.

[73] Die Ornis der Insel Salanga, p. 53, 1882

[74] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 438, 1919.

[75] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 151, 1923.

CACOMANTIS MERULINUS QUERULUS Heine

Cacomantis querulus HEINE, Journ. für Orn., 1863, p. 352 (Farther India and Nepal).

One adult male, Prae, April 10, 1930; one adult male, one immature male, and two immature females, Bangkok, October 31, 1923, September 3, 1924, August 3, 1926; one immature (not sexed), Pong, Udon, February 17, 1929; one adult male, Nong Khor, near Sriracha, March 24, 1926; one immature male, Koh Lak, June 22, 1933; one male, Kao Soi Dao, Trang, January 13, 1934; one immature male and one immature female, Bangnara, Patani, July 14 and 17, 1926. Dr. Smith also collected an adult male at Vientiane, Laos, February 23, 1929.

Dr. Abbott collected an immature female at Boyces Point, Tenasserim, February 12, 1904. This specimen has just commenced to change on the pileum and the throat to the adult plumage. It is much lighter on the lowerparts and back than fall-taken immature females but shows little or no wear.

Deignan[76] reports that at Chiengmai it occurs throughout the year but that it is rare from September to February; Chasen and Kloss[77] record it from Raheng, western Siam; Robinson and Kloss[78] say that it appears to be present in the Peninsula throughout the year but that its numbers are greatly augmented during the winter months.

The form ranges from eastern Bengal, Assam, and Burma, to Yunnan, southern China, Tonkin, Laos, Annam, Cambodia, Siam, and Peninsular Siam as far south as Patani. It is migrant in the northern part of its range but resident in the southern; its numbers in the south are augmented in the winter months by northern migrants.

Cacomantis merulinus threnodes Cabanis and Heine, a smaller, paler form, inhabits the Malay States, Sumatra, and the Mentawi Islands. So far as known, it has not been taken in Peninsular Siam, but it may occur along the southern border.

CACOMANTIS SEPULCRALIS SEPULCRALIS (Müller)

Cuculus sepulcralis S. MÜLLER, Verhandelingen over de natuurlijke Geschiedenis der Nederlandsche overzeesche bezittingen . . ., p. 177, note, 1839–44 (Java and Sumatra).

Dr. W. L. Abbott purchased an immature specimen in Penang, said to have been shot in the Province of Wellesley. I place it here with some doubt.

This is a darker and somewhat larger cuckoo than *C. merulinus querulus*; the chest is darker, and the cinnamon color extends farther forward, almost to the chin; the white notching on the inner webs of the outer tail feathers does not reach the shaft.

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[76] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 159, 1931.

[77] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 168, 1928.

[78] Ibis, 1911, p. 40.

Robinson[79] reports the taking of a male on Koh Muk, Trang, January 4, 1917; Robinson and Kloss[80] list it from Kao Luang, 2,000 feet, Nakon Sritamarat, and also[81] a male and immature female from Tapli, Pakchan, taken March 4, 1919. Judged from the records, it is probably not a common permanent resident.

The range of the form is Peninsular Siam, the Malay States, Sumatra Java, Bali, Lombok, Sumbawa, Sumba, and the Philippines, except the Sulu Islands.

PENTHOCERYX SONNERATII SONNERATII (Latham)

Cuculus sonneratii LATHAM, Index ornithologicus, vol. 1, p. 215, 1790 (India).

One male and one female, Chiengmai, November 27, 1928; one male and one female, Muang Pai, December 28, 1932; one female, Hupbon, October 31, 1931.

Deignan[82] reports it uncommon in winter on Doi Sutep to 4,600 feet and on the plain; Chasen and Kloss[83] record it from the Raheng District; Gyldenstolpe[84] lists it from Bangkok and later[85] from Pa Hing, northern Siam; Stuart Baker[86] records it from Hupbon, southeastern Siam.

Apparently this cuckoo is an uncommon bird in Siam. It ranges from India to Burma, Assam, Siam, South Annam, and Cochinchina, and south to central Tenasserim.

PENTHOCERYX SONNERATII MALAYANUS Chasen and Kloss

Penthoceryx sonnerati malayanus CHASEN and KLOSS, Bull. Raffles Mus., no. 5, p. 84, 1931 (Kuala Lumpur, Selangor).

Dr. W. L. Abbott collected two males in Trang, January 27, 1897, and January 20, 1899. He gives the soft parts as follows: Iris brown; feet leaden with a greenish tinge; bill black above, dull leaden brownish at base beneath.

These two males measure: Wing, 112–119.5; tail, 99–103; culmen, 19.5–20 mm. Two males of *P. s. sonnerati* collected by Dr. Smith in northern Siam measure: Wing, 128.5–133; tail, 120–128; culmen, 21–21.5 mm. Three females (2, northern Siam; 1, southeastern Siam): Wing, 126.5–130 (128.2); tail, 116.5–127 (121.7); culmen, 20–22 (21 mm). Apparently there is little difference between the sexes.

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[79] Journ. Federated Malay States Mus., vol. 7, p. 155, 1917.

[80] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

[81] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 153, 1923.

[82] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 159, 1931.

[83] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 168, 1928.

[84] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 58, 1913.

[85] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 103, 1916.

[86] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 438, 1919.

Robinson and Kloss record a female from Chong, Trang, December 27, 1910 [87]; a specimen from Nong Kok, Ghirbi, January 6, 1918 [88]; and specimens from Kao Ram, 1,200 feet, and Kao Luang, Nakon Sritamarat.[89] De Schauensee [90] took a male at Nakon Sritamarat on May 25. August Müller [91] long ago recorded two specimens from the island of Puket (Salanga).

Apparently it is not a common bird in Peninsular Siam. The form ranges from central Tenasserim south through Peninsular Siam to Selangor.

Chasen and Kloss [92] say that *Penthoceryx sonneratii fasciolatus* (S. Müller) is found in the extreme south of the Malay Peninsula and Sumatra. No specimens of this form are available for examination. *Penthoceryx sonneratii musicus* (Ljungh) inhabits Java. A male of this form in the United States National Museum is more russet above and with narrower black crossbars than *malayanus;* below the black crossbars are narrower; it is smaller, wing 106 mm.

In a young male from the island of Tablas, Philippines, the black crossbars above and below are very broad and distinct, more so than any mainland bird before me (there are immatures from Raheng, Siam); the black on the central tail feathers occupies nearly the whole area and it has a purplish sheen, the russet along the borders reduced. It is nearly adult. The wing measures 118 mm.

In the Philippines the species has been recorded from Calamianes, Palawan, and Tablas.[93] Specimens from these islands probably represent an unnamed form.

CHALCITES XANTHORHYNCHUS XANTHORHYNCHUS (Horsfield)

Cuculus xanthorhynchus Horsfield, Trans. Linn. Soc. London, vol. 13, p. 179, 1821 (Java).

One male, Kao Luang, Nakon Sritamarat, July 16, 1928; two males and one female, Nong Yang, near Sriracha, November 9, 1931; one female, Bangkok, January 1, 1925; one immature male, Muck Lek, April 25, 1933. Dr. Smith also secured an adult male at Vientiane, Laos, February 20, 1929.

The specimen marked "female" from Nong Yang differs somewhat from the female from Bangkok, especially in the central tail feathers. In the Nong Yang bird these are barred with bronzy green and cinnamon, while in the Bangkok specimen, they are unbarred, bronzy green with a purple sheen, the edges and tip cinnamon. The Bangkok bird is a little larger. The female from Nong Yang resembles the immature male from Muek Lek in the pattern of the tail, except that the latter has acquired two of the violet-purple outside feathers and one middle feather of the adult plumage. I consider the Nong Yang specimen an immature male.

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[87] Ibis, 1911, p. 40.

[88] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 98, 1919.

[89] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

[90] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 257, 1934.

[91] Die Ornis der Insel Salanga, p. 52, 1882.

[92] Bull. Raffles Mus., no. 5, p. 84, 1931.

[93] McGregor, A manual of Philippine birds, pt. 1, p. 373, 1909.

The immature male from Muek Lek has acquired the adult plumage on the back, head, and chest; the wings have not changed yet but resemble those of the female, although one new violet-purple secondary has appeared in the right wing; the tail is barred cinnamon and bronzy green, somewhat like the outside feathers of the adult female; the green bars are closer together and run together along the shaft. The cinnamon is reduced to mere notches on the old remaining middle feather; there is one new violet-purple middle feather and two new outside feathers of the adult male plumage.

Three males from the Philippines (Palawan, 2; Mindanao, 1) are somewhat smaller than the Siamese series. The three Philippine males measure: Wing, 92–105 (97.2); culmen, 14–15 (14.7) mm. The four males from Siam: Wing, 103.5–108 (105.4); culmen, 16–16.5 (16.1) mm.

No specimens from Java are available for comparison.

For some reason, probably because of its habits, there are few records of the violet cuckoo for Siam.

Ogilvie-Grant [94] records specimens from Patani; Williamson [95] from Bangnara, Patani, and Bangkok; Robinson and Kloss [96] from the eastern boundary of Trang; Robinson [97] from Ban Kok Klap, Bandon; and de Schauensee [98] from Bua Yai, Sriracha, and Nakon Sritamarat.

The species ranges from Bengal east of the Bay and to Burma, Siam, Laos, Cochinchina, South Annam, and south through Peninsular Siam to the Malay States, Nicobar and Andaman Islands, Sumatra, Java, Borneo, and the Philippines.

The male of this species is easily distinguished. It is a beautiful, shining, dusky violet above and on the chest and throat; breast white barred with purple and dark green; bill yellow. The female can be differentiated from the same sex of *maculatus* by the different color of the pileum, back, and central tail feathers; in *maculatus*, the pileum and hindneck are cinnamon, with slight dusky crossbars, while in *xanthorhynchus* they are natal brown, with faint crossbars of pecan brown; the back in the latter is shining olive, with lilac-purple iridescence in certain lights, each feather edged with orange-cinnamon; in *maculatus* the back and wings are a shining coppery emerald-green; in *xanthorhynchus* the feathers of the wing are like the back and broadly edged with orange-cinnamon; the middle tail feathers in the latter are a bronzy green in certain lights, broadly edged on the outer web and narrowly tipped with mikado brown; in other lights they are a bronzy lilac purple with a green sheen; the middle tail feathers of *maculatus* are emerald green with dusky tips.

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[94] Fasciculi Malayenses, pt. 3, 105, 1905.

[95] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 25, 1918.

[96] Ibis. 1911, p. 41.

[97] Journ. Federated Malay States Mus., vol. 5, p. 93, 1915.

[98] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 257, 1934.

CHALCITES MACULATUS (Gmelin)

Trogon maculatus GMELIN, Systema naturae, vol. 1, pt. 1, p. 404, 1788 (Ceylon, error; Pegu).

One female, Kao Soi Dao, Trang, January 17, 1934.

The range of the species is the Himalayas from Kuman to Assam, Burma, and western China (in Szechwan as far north as Wenchwan), Tonkin, Annam, Cochinchina, Siam, and south through Peninsular Siam to the Malay States. In Siam it has been recorded on Doi Sutep by Deignan[99] and others; Stuart Baker[1] from Samray, near Bangkok; de Schauensee[2] from Bangkok and later[3] from Chiengdao and Bua Yai; Lowe[4] found it on the Klong Klung River, western Siam; Robinson and Kloss[5] report it from Nong Kok, Ghirbi. Earlier[6] they had recorded it from the eastern boundary of Trang.

As this species breeds far north in western China and in India apparently in the mountains, it must move south in winter, at least in the northern part of its range. It may breed in the mountains of northern Siam, but in Peninsular Siam and the Malay States it probably is only a winter visitor.

The color of the male is a beautiful shining emerald-green above and on the throat and chest; breast and belly white, barred with bronzy green; wing, 115 mm. The female is bronzy green above; the pileum and hindneck cinnamon, with a few dusky bars; below, including the throat, white, barred with bronzy green; the central tail feathers color of the back with a dusky tip; rest, except outer pair, cinnamon with bronzy green interrupted bars, a bronzy green or dusky subterminal bar and white or cinnamon tip, the outer pair of feathers with white bars on the outer web and extending about halfway across on the inner; bill in both sexes yellow, dusky at the tip.

There are not many records for Siam, but this is probably due to some peculiarity of the bird's habits.

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[99] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 159, 1931.

[1] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 439, 1919.

[2] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 574, 1928.

[3] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 257, 1934.

[4] Ibis, 1933, p. 477.

[5] Journ. Nat. Hist. Soc. Siam. vol. 3, p. 98, 1919.

[6] Ibis, 1911, p. 41.

CHALCITES MALAYANUS MALAYANUS (Raffles)

Cuculus malayanus RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 286, 1822 (Malay Peninsula).

One male, Yala, Patani, February 1, 1931.

This form of cuckoo has not been taken north of Patani, whence it was recorded by Ogilvie-Grant.[7] Dr. Smith's specimen is apparently the second record. In the Malay States it has been recorded more frequently.

The form ranges from Patani in Peninsular Siam to the Malay States, Sumatra, Java, Borneo, the southern Philippines, and Celebes.

Hartert and Stresemann,[8] in their paper on the Indo-Australian forms of the genus, divide *Chalcites malayanus* into 10 races, two unnamed. They all occur on islands to the south of the range of the Malay race and reach Australia.

Dr. Smith's specimen from Patani has a longer wing than a male from Java and two males from Pulo Panjang, Borneo. The wings of the males in the United States National Museum measure as follows: Patani, 98; Java, 94; Borneo, 90–93; Celebes, 90 mm.

The female of this form is similar to the male but with an intensified purple sheen to the green above. The pileum is like the back, a dull bronzy green with purplish reflections; the middle tail feathers are like the back, with a subterminal dusky tip. The female should not be confused with the same sex of the other two members of the genus occurring in Siam. The male is green above, with purplish-bronzy reflections.

SURNICULUS LUGUBRIS DICRUROIDES (Hodgson)

Pseudornis dicruroides HODGSON, Journ. Asiat. Soc. Bengal, vol. 8, p. 136, 1839 (Nepal).

One male, Hupbon, November 5, 1931; one male, Nong Yang, west of Sriracha, November 6, 1931; one male, Nong Khor, near Sriracha, March 22, 1926; one male, Tha Chang, west of Korat, March 20, 1927; one male and one female, Kao Sabap, November 16 and 19, 1933; one male, Kao Soi Dao, Trang, January 8, 1934.

Dr. W. L. Abbott took a male on Pulo Langkawi, Langkawi Group, December 3, 1899, that measures: Wing, 146.5; tail, 120; culmen, 20 mm.

The wing of the Langkawi bird is longer than any in the series taken by Dr. Smith in southeastern Siam and apparently belongs to the northern form. It was taken in winter, and it is probable the northern form may wander south at this season of the year; the male taken by Dr. Smith in Trang apparently also belongs to the northern form. The Kao Sabap male is small; wing, 134; it may be a bird of the year.

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[7] Fasciculi Malayenses, pt. 3, p. 105, 1905.

[8] Nov. Zool., vol. 32, pp. 160–163, 1925.

Robinson and Kloss,[9] however, assign all Peninsular birds north of Patani to the northern form. I think they are intermediate, but no specimens from the Malay States have been available for examination.

Four males collected by Dr. Smith in southeastern Siam measure: Wing, 135.5–142.5 (138.7); tail, 122–138 (128.6); culmen, 20–21 (20.4 mm).

Gyldenstolpe [10] took a female at Ban Meh Na, a small village at the foot of Chiengdao Mountain in northern Siam, June 24; Deignan [11] reports it occasionally seen in March, August, and September at Chiengmai; de Schauensee [12] records it from Bangkok, March 27; Baker [13] from Krabin and Pak Chong; Kloss [14] from Koh Lak, southwestern Siam. Judged from the records, the form is not a common bird in Siam proper.

The form ranges from Upper India, Assam, Burma, Yunnan, and Siam to Laos, Tonkin, Annam, Cochinchina, Cambodia, and southern China. In Peninsular Siam it ranges as far south as latitude 10° N., according to Stuart Baker.[15]

SURNICULUS LUGUBRIS BARUSSARUM Oberholser

Surniculus lugubris barussarum OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 5, 1912 (Tana Bala Island, Batu Islands).

Surniculus lugubris brachyurus STRESEMANN, Nov. Zool., vol. 20, p. 340, 1913 (Bentong, Pahang).

One male, Koh Samui, Bandon, August 7, 1931.

Dr. W. L. Abbott took one male at Tyching, Trang, July 1, 1896; one male and one female, Trang, January 26 and 29, 1899. He describes the soft parts as follows: Iris dark brown; bill black; feet leaden blue.

Robinson and Kloss [16] give it as a common resident throughout the Malay Peninsula. The birds from north of the Malay States are probably intermediate, but on geographic grounds I am placing them with the southern form.

Three males from Trang (2) and Bandon (1) measure: Wing, 127–135 (131); tail, 114.5–131 (120.2); culmen, 19.5–21 (20.2 mm).

Ogilvie-Grant [17] has recorded it from Patani, and from there it is found as far north as Bandon. The form ranges from the extreme southern Malay States north to latitude 10° N., Sumatra, and the Batu Islands.

Surniculus lugubris lugubris (Horsfield) is confined to Java and Bali.

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[9] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 150, 1923.

[10] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 102, 1916.

[11] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 159, 1931; vol. 10, p. 88, 1936.

[12] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 573, 1928.

[13] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 439, 1919.

[14] Ibis, 1918, p. 97.

[15] The fauna of British India, Birds, ed. 2, vol. 4, p. 165, 1927.

[16] Ibis, 1911, p. 39.

[17] Fasciculi Malayenses, pt. 3, p. 106, 1905.

CLAMATOR COROMANDUS (Linnaeus)

Cuculus coromandus LINNAEUS, Systema naturae, ed. 12, p. 171, 1766 (Coromandel Coast).

One male, Ban Nam Kien, near Nan, April 19, 1930; one male and one female, Bangkok, January 26 and September 14, 1925; one male, Pran, southwestern Siam, June 1, 1928.

Gyldenstolpe[18] records it from Khun Tan; Deignan[19] says that it is apparently migratory at Chiengmai, where he noted it in February, March, July, September, and November; Barton[20] lists it from the Raheng District; de Schauensee[21] from Bangkok, March 3, and Pak Djong, April 5; Robinson[22] from Langkawi, Terutau, and Pulo Telibun, Trang; Robinson and Kloss[23] from Kao Keo, Nakon Sritamarat. The latter authors say it is not uncommon in the winter months over the whole of the Malay Peninsula.[24] De Schauensee[25] on his third journey to Siam took a male at Petrieu, October 16.

The range of the species is the Indian Peninsula and Ceylon east to Assam, Burma, Siam, Laos, Tonkin, Cochinchina, Annam, and southern China and south through Peninsular Siam to the Malay States, Sumatra, Java, Borneo, and Celebes.

This cuckoo is only a summer resident in the northern part of its range, moving south in winter; in the Malay Peninsula and south it is supposed to be only a winter visitor.

EUDYNAMYS SCOLOPACEA MALAYANA Cabanis and Heine

Eudynamis malayana CABANIS and HEINE, Museum Heineanum, pt. 4, p. 52, 1863 (Sumatra).

Four males and one female, Bangkok, September 19–October 5, 1924, November 9, 1925, April 1, 1926; one male, Pang Sok, August 19, 1926; one female, Vichienburi, February 26, 1934; one immature male, Muang Kanburi, April 14, 1928; one female, Bandon, January 5, 1927; one male, Koh Tao, off Bandon, September 22, 1928; one male, Koh Pangan, off Bandon, July 31, 1931.

Dr. W. L. Abbott collected five males in Trang (Prahmon, April 5, 1896; Kantany, January 16–17, 1897; Trang, February 10, 1897); two males, Pulo Berhala, Straits of Malacca, November 11, 1905; and two males and one female, Mergui Archipelago (Domel Island, January 23, 1904; South Twin Island, January 27, 1900). He describes the soft parts as: Iris vermilion; bill dull horny green; feet leaden.

I have grave doubts whether specimens from Siam and Peninsular

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[18] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 101, 1916.

[19] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 159, 1931; vol. 10, p. 88, 1936.

[20] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 107, 1914.

[21] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 573, 1928.

[22] Journ. Federated Malay States Mus., vol. 7, p. 158, 1917.

[23] Journ. Federated Malay States Mus., vol. 11, p. 59, 1923.

[24] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 150, 1923.

[25] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 257, 1934.

Siam really belong to *malayana*. The only males of the form examined by me from farther south are a specimen from Java and one from Pulo Babi, west of Sumatra. Both have a steely-blue sheen to the upperparts, especially the tail, that cannot be matched by any of the specimens from Peninsular Siam or Siam proper. The bill also seems to be larger. The culmen of the Java male measures 34 mm; that from Pulo Babi, 35.5 mm. Seven males from the Malay Peninsula (Trang, 5; Straits of Malacca, 2) have culmens of 30–34 (32.3) mm; five males from Siam proper, 27–34 (30.2) mm. There seems to be a gradual decrease in the size of the bill from south to north.

The female from Domel Island is quite different from the three females from Siam listed above. The upperparts, wings, and tail are spotted and barred with white; the streaks on the pileum only light buffy; below the streaks or bars are white. The three females from Siam are spotted or barred with ochraceous-tawny, especially the tail; only a few scattered spots on the mantle being white. Below they are warm buff.

In southern China and Indo-China a smaller race, *Eudynamys scolopacea chinensis* Cabanis and Heine, occurs. The only females I have seen of this form are black and white like the female from Domel Island. Some of the small-billed specimens from Siam may really belong to the Chinese race. La Touche[26] says that it is only a summer resident in southeastern China and consequently must go south in winter. The material at my command is not sufficient to settle the question at present, and I am following previous authors in recognizing only one race in Siam.

Robinson and Kloss[27] say that it is a migratory bird in the Peninsula and Robinson[28] confirms this statement.

Some form of this koel has been recorded from nearly all over Siam proper and Peninsular Siam into the Malay States. Deignan[29] found it at Chiengmai in March and May. Herbert[30] found it breeding in central Siam, parasitic on the crow. As a rule only one egg is found in a nest, but sometimes three or four occur.

ZANCLOSTOMUS JAVANICUS PALLIDUS Robinson and Kloss

Zanclostomus javanicus pallidus Robinson and Kloss, Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 203, 1921 (Kehdah Peak, 2,500–3,500 feet, Malay Peninsula).

Two females, Kao Soi Dao, Trang, December 21 and 27, 1933; one unsexed, Kao Chong, Trang, September 1, 1933; one female, Waterfall, Trang, August 25, 1933.

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[26] A handbook of the birds of eastern China, vol. 2, pt. 2, p. 55, 1931.

[27] Ibis, 1911, p. 41.

[28] Journ. Federated Malay States Mus., vol. 7, p. 160, 1917.

[29] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 160, 1931.

[30] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 304, 1924.

Dr. W. L. Abbott collected two males and two females in Trang (Lay Song Hong, October 1, 1896; Trang, January 24, 1897; Kao Soi Dao, 1,500 feet, February 15 and 25, 1899); and one male at the Dindings, Straits of Malacca, April 15, 1900. He gives the color of the soft parts as follows: Iris very dark red; bill red, black at base of culmen; naked orbital skin blue; feet lead color.

This form ranges from southern Tenasserim and southwestern Siam south through Peninsular Siam to the Malay States.

Ogilvie-Grant[31] records it from Patani; Robinson and Kloss[32] list it as common in Trang; Robinson[33] records it from near Bankok Klap, Bandon; Robinson and Kloss[34] list it from Kao Ram, 1,000 feet, and Kao Luang, 2,000 feet, Nakon Sritamarat; de Schauensee[35] received seven specimens from Nakon Sritamarat; Robinson and Kloss[36] say this is a hill bird, fairly common in heavy jungle.

A darker form, *Zanclostomus javanicus javanicus* (Horsfield), is confined to Java.

RHOPODYTES TRISTIS LONGICAUDATUS (Blyth)

Phoenicophaes longicaudatus Blyth, Journ. Asiat. Soc. Bengal, vol. 10, p. 923, 1841 (Moulmein, Tenasserim).

One male, Doi Nangka, November 18, 1930; one female, Aranya, July 22, 1930; one female, Ban Nam Kien, Nan, April 22, 1930; one male, Gengkoi, on the Pasak River, October 16, 1932; two males and one female, Lat Bua Kao, July 31 and August 10, 1929; one female, Hin Lap, December 12, 1931; two males, one female, and one unsexed, Pak Chong, November 19–30, 1929, June 25, 1934; one female, Lam Klong Lang, Pak Chong, June 7, 1925; two males, Ban Haad Hai, March 2 and July 12, 1929; one male, Ban Hoa Kam, February 28, 1929; three males and one female, Huey Yang, Sriracha, August 2–6, 1932; one female, Klong Yai, Sriracha, July 23. 1932; one male and one female, Nong Yang, east of Sriracha, October 20 and November 7, 1931; one male and one female, Hupbon, October 27 and November 2, 1931; one male, Lem Sing, Chantabun, June 11, 1926; one male, Kao Sabap, November 14, 1933; one male, and two females, Koh Chang, January 7–13, 1926; one female, Koh Kut, May 25, 1929; one male, Muang Kanburi, April 7, 1928; four males and two females, Pran, April 2–3, 1931; one male, Koh Lak, June 23, 1933; one male, Tha Lo, Bandon, September 27, 1931; one female, Nakon Sritamarat, September 27, 1926; one female, Ban Tha Yai, west of Nakon Sritamarat, July 9, 1928; one female, Kao Chong, Trang, August 30, 1933; one female, Kao Soi Dao, Trang, January 8, 1934; one female, Yala, Patani, February 2, 1931; two males, Bangnara, Patani, May 13, 1924, July 3, 1926.

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[31] Fasciculi Malayenses, pt. 3, p. 104, 1905.

[32] Ibis, 1911, p. 42.

[33] Journ. Federated Malay States Mus., vol. 5, p. 94, 1915.

[34] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

[35] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 258, 1934.

[36] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 156, 1923.

Dr. Smith gives the colors of the soft parts as follows: Iris dark brown; bill light green; feet dusky green or (in a specimen from Patani) blue.

Dr. W. L. Abbott collected one male and four females, Trang (Prahmon, February 20–April 3, 1896; Tyching, July 4, 1896; Kantany, January 15, 1897); and two males, Mergui Archipelago (Domel Island, February 27; Helfer Island, March 6, 1900). He gives the following notes on the soft parts: Iris dark red; bill light green, space about nostril dark red; tarsi dull olive or leaden; naked orbital space dull red.

This form ranges nearly all over Siam and down Peninsular Siam to the Malay States; it extends to Tenasserim and southern Burma, Laos, Tonkin, Annam, Cochinchina, and southern China. It seems to be common in Siam proper, but in the Malay States it is less so and confined almost exclusively to the hills.[37] It also has been recorded from Koh Samui[38] and Kao Nawng, 3,000 feet, Bandon,[39] by Robinson. Herbert [40] says that the breeding season in central Siam extends from April 3 to August 13. The clutch consists of two or three eggs. Herbert gives a description of the nest and eggs. De Schauensee[41] states that it appears to ascend the hills higher in summer than it does in winter. Aagaard took it at 4,600 feet on Doi Sutep.[42]

There is some uncertainty about the application of Lesson's *Melias tristis*. He gave no locality. Hartert [43] states that he accepts Pegu. If he is upheld, it seems to me that the Siamese race will become *R. t. tristis* and the form from northern India will become *R. t. monticolus* (Blyth).[44]

RHOPODYTES DIARDI DIARDI (Lesson)

Melias diardi Lesson, Traité d'ornithologie, p. 132, 1831 (Java, error; Hartert [45] substitutes Sumatra).

One male, Bukit, Patani, January 27, 1931.

Dr. W. L. Abbott collected a female near Kao Nok Ram, Trang, January 5, 1899, and gives the following note on the soft parts: Feet dull leaden; bill green, a pale blue spot over the nostril.

Bonhote[46] and Ogilvie-Grant[47] record this form from Patani;

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[37] Robinson, The birds of the Malay Peninsula, vol. 2, p. 79, 1928.

[38] Journ. Federated Malay States Mus., vol. 5, p. 146, 1915.

[39] Ibid., p. 94.

[40] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 304, 1924.

[41] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 258, 1934.

[42] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 235, 1932.

[42] Nov. Zool., vol. 9, p. 545, 1902.

[44] Journ. Asiat. Soc. Bengal, vol. 11, p. 1095, 1842.

[45] Nov. Zool., vol. 9, p. 545, 1902.

[46] Proc. Zool. Soc. London, vol. 1, p. 75, 1901.

[47] Fasciculi Malayenses, pt. 3, p. 103, 1905.

Robinson and Kloss[48] report it rare in Trang, where they secured only two specimens; later[49] they record a female from Nong Kok, Ghirbi; de Schauensee[50] obtained three specimens in Nakon Sritamarat. Barton's record from the Raheng District[51] later was questioned by Glydenstolpe.[52]

The species is not a common bird in Peninsular Siam, being commoner in the extreme south and the Malay States. It ranges from Sumatra to the Malay States and northward through Peninsular Siam to southern Tenasserim.

I have examined only three specimens from the Malay Peninsula and two from Sumatra, and these apparently do not show any material differences. A closely related form, *Rhopodytes diardi borneensis* Salvadori, is confined to Borneo.

RHOPODYTES SUMATRANUS (Raffles)

Cuculus sumatranus RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 287, 1822 (Sumatra and adjacent islands).

Two males, Bangnara, Patani, May 13, 1924, July 10, 1926; one female, Yala, Patani, January 29, 1931; one male and one female, Patalung, July 7, 1929; four females, Tha Lo, Bandon, September 15–30, 1931; two females, Kao Soi Dao, Trang, January 4 and 15, 1934.

Dr. Smith describes the soft parts as: Bill grayish green; feet dark green; circumorbital skin orange-red.

Dr. W. L. Abbott collected the following: Four males and three females, Trang (Prahmon, February 23–March 22, 1896; Lay Song Hong, August 15 and November 12, 1896); two males and two females, Trengganu (Tanjong Dungan, September 20; Dungun River, September 22; and Packa, September 27, 1900); one male and one female, Singapore Island, May 16 and 29, 1899; one male, Pulo Rupat, Straits of Malacca, March 15, 1906.

Dr. Abbott gives the following notes on the soft parts: Iris dark red, sclerotic pale blue or white (5), reddish orange (1), brown, surrounded by a pale blue ring, outside this a darker blue (1), pale blue or blue (5), bluish white (1); bill light green; feet slate; orbital space orange-red, posterior angle blood red.

Judged from the above, the color of the iris must vary considerably; according to the sexing, it is not due to sex, but possibly age or season.

One male from Sumatra, one male from Banka, and one female from Billiton are the only typical specimens available for comparison. They do not seem to differ from mainland birds.

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[48] Ibis, 1911, p. 42.

[49] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 99, 1919.

[50] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 258, 1934.

[51] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 107, 1914.

[52] Ibis, 1920, p. 595.

A series of five males and three females from Borneo are smaller and paler on the throat, and the chestnut of the breast is more restricted than in mainland specimens. Ten males from the Malay Peninsula measure: Wing, 132.5–151 (144); tail, 209–230 (221.7); culmen, 30–36.5 (33.5) mm. Five males from Borneo: Wing, 130–145 (136.2); tail, 209–224 (214); culmen, 30–33.5 (31.7) mm.

Robinson[53] records *R. sumatranus* from Lem Pia, Telibun Straits and Krongmon, Trang; Robinson and Kloss[54] from Nong Kok, Ghirbi. It does not seem to be a common bird in Peninsular Siam.

The range is from Sumatra, Banka, and Billiton to the Malay States and north through Peninsular Siam to southern Tenasserim. A slightly smaller race (*Rhopodytes s. minor* Riley) occurs in Borneo.

UROCOCCYX ERYTHROGNATHUS ERYTHROGNATHUS (Hartlaub)

Phoenicophaes erythrognathus Hartlaub, Systematisches Verzeichniss der naturalhistorischen Sammlung der Gesellschaft Museum [von Bremen], p. 95, 1844 (Sumatra).

One male and three females, Bangnara, Patani, May 9 and June 2, 1924, July 15 and 18, 1926; one male, Yala, Patani, January 30, 1931; two males and one female, Kao Luang, Nakon Sritamarat, July 17 and 23, 1928; one male and one female, Huey Yang, Kao Luang, October 9, 1930; one male, Sichol, Bandon, May 22, 1930; one male and one female, Tha Lo, Bandon, May 22, 1930, September 15, 1931; one male and one female, Waterfall, Trang, August 25, 1933; one male, Kao Chong, Trang, September 3, 1933; one male, Kao Soi Dao, Trang, January 12, 1934.

Dr. W. L. Abbott collected the following specimens: Five males and two females, Trang (Prahmon, March 14, 1896; Lay Song Hong, September 9, 1896; Trang, January 31–February 4, 1897; Kao Nom Plu, 1,000 feet, February 25, 1897 and Kao Nok Ram, 1,000 feet, January 4, 1899); one female, Pulo Langkawi, December 4, 1899; two males and two females, Trengganu (Tanjong Dungun, September 20 and 24, 1900; Packa River, September 24, 1900; Tanjong Laboha, September 30, 1900); one male, Endau River, Pahang side, June 27, 1901; one male, Endau River, Johore, June 29, 1901; one male and one female, Tenasserim (Victoria Point, December 17, 1900; Bok Pyin, February 12, 1900).

Dr. Abbott gives the following note on the soft parts: Bill green, dull red at base; feet dark leaden; orbital space dark crimson; spot on lower eyelid white; iris blue (male), yellow (female).

Robinson and Kloss[55] record it from Tasan, Chumporn, and this seems to be about its northern limit on the Siamese side of the Isthmus. In Tenasserim it has been taken as far north as Yea. Southward from these localities it seems to be fairly well distributed throughout Peninsular Siam, the Malay States, Sumatra, and Banka.

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[53] Journ. Federated Malay States Mus., vol. 7, p. 158, 1917.

[54] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 99, 1919.

[55] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 158, 1923.

A closely related form, *Urococcyx erythrognathus borneensis* (Blasius and Nehrkorn), inhabits Borneo.

RHINORTHA CHLOROPHAEA CHLOROPHAEA (Raffles)

Cuculus chlorophaeus Raffles, Trans. Linn. Soc. London, vol. 13, p. 288, 1822 (Sumatra).

Four males and three females, Bangnara, Patani, May 28, 1924, July 7–19, 1926; one female, Bukit, Patani, January 26, 1931; two females, Patalung, July 8, 1929; one male and one female, Kao Luang, Nakon Sritamarat, July 17 and 22, 1928; two males and two females, Sichol, Bandon, September 5, 1929, May 20 and 24, 1930; one female, Kao Chong, Trang, August 29, 1933; one female, Kao Soi Dao, January 22, 1934.

Dr. W. L. Abbott collected four males and two females in Trang (Lay Song Hong, September 7–15, 1896; Trang, January 25–February 2, 1897); one male and one female, Trengganu (Tanjong Dungun, September 19, 1900 and Dungun River, September 1900); one female, Endau River, east coast of Johore, July 13, 1901; and one male, Rumpin River, Pahang, May 27, 1902. He describes the soft parts as: Iris dark brown; bill pale green; orbital skin pale greenish blue; feet leaden blue.

Apparently there are no material differences between specimens from northern Peninsular Siam, southern Peninsular Siam, and the Malay States and those from Sumatra. Southern birds have somewhat shorter tails. Specimens from Borneo represent a distinct form, however, with appreciably shorter tails and the shadow barring on the tails of the males less distinct and the throat and foreneck in the females, as a rule, washed with buffy; the latter sex also is somewhat darker on the back than the mainland form.

Seven males from Trang (4), Bandon (2), and Nakon Sritamarat (1) measure: Wing, 114–118.5 (115.9); tail, 170–177 (172.6); culmen, 27–30.5 (28.9) mm. Four males from Patani, one from Trengganu, and one from Pahang: Wing, 112–117.5 (114.6); tail, 160–177 (168.5); culmen, 26–31 (28.5) mm. Five males from Sumatra: Wing, 110–119 (115.8); tail, 161–169 (166.2); culmen, 26.5–28 (27.3) mm. One male from Tana Masa, Batu Islands: Wing, 121; tail, 182.5; culmen, 29 mm. Ten males from Borneo: Wing, 110–119 (114.6); tail, 149.5–169.5 (159); culmen, 26–28 (27) mm.

The male from the Batu Islands may represent an undescribed form. It has a considerably longer wing and tail than any male measured from elsewhere.

Rhinortha chlorophaea chlorophaea ranges from Sumatra to the Malay States and northward through Peninsular Siam to Yea, Tenasserim. Robinson and Kloss[56] record it from Tapli, Pakchan.

Rhinortha chlorophaea fuscigularis Stuart Baker is confined to Borneo.

CENTROPUS SINENSIS INTERMEDIUS Hume

Centropus intermedius Hume, Stray Feathers, vol. 1, p. 454, 1873 (Dhoon, Dacca and Thayetmyo).

One male, Bung Borapet, June 21, 1932; two adult males, one immature male, and one immature female, Bankgok, February 13, March 11, April 28, and October 22, 1924; one male, Sakeo, near Krabin, May 6, 1928; one male, Knong Phra, Pak Chong, April 14, 1929; one male Nong Khor, near Sriracha, March 19, 1926; one male, Chantuk, June 12, 1934; two males, Muang Kanburi, April 9, 1928; one adult female and one immature female, Koh Pangan, off Bandon, July 30–31, 1931; one male and three females, Koh Tao, December 28, 1926, September 17–20, 1928; one female, Patalung, July 9, 1929; one female, Pak Bhayoon, Tale Sap, July 11, 1929.

Dr. W. L. Abbott collected two males and one female in Trang (Prahmon, April 2 and 4, 1896; and Tyching, May 24, 1896); and two females in Tenasserim (Maliwun, March 21, 1900; Telok Besar, February 29, 1904).

The present form ranges from Assam south of the Brahmaputra, Burma, Siam, French Indo-China, Hainan, and Peninsular Siam as far south as Trang at least. In Siam it occurs nearly all over the country from the north, where it has been recorded by Gyldenstolpe[57] from Khun Tan and Doi Par Sakeng; and by Deignan[58] from Chiengmai. It has been reported from other localities to at least as far south as Trang in Peninsular Siam. Herbert[59] found it nesting in central Siam from May until September 20, laying three or four eggs. It has also been found on many of the islands around the coast of Siam.

Delacour and Jabouille[60] state that the specimens from Indo-China are intermediate between this race and *C. s. sinensis.* The latter is a larger race occuring in southern China.

The immature female from Bangkok was collected February 13 and is about half grown. It must therefore have been hatched at a later date than the last date given by Herbert.

CENTROPUS BENGALENSIS BENGALENSIS (Gmelin)

Cuculus bengalensis Gmelin, Systema naturae, vol. 1, pt. 1, p. 412, 1788 (Bengal).

One immature male and one immature female, Bangkok, May 12 and 13, 1924; one male, nearly adult, Bung Borapet, June 24, 1932.

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[56] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 158, 1923.

[57] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 107, 1916.

[58] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 160, 1931.

[59] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 305, 1924.

[60] Oiseaux l'Indochine Française, vol. 2, p. 187, 1931.

The male from Bung Borapet has assumed the adult plumage, except on the tail, where one new central tail feather on the left side is coming in. The head and lower parts are purplish black, while in *javanensis*, of Peninsular Siam, these parts are greenish black; the northern form is brighter and more russet on the back.

The range of this form is the southwestern coast of India, Bengal, Assam, Burma, Tenasserim, Siam proper, Laos, Tonkin, Annam, Cochinchina, and southeastern China. In Siam it has been recorded from nearly all over the country and as far to the southwest as the Petchaburi District, where it was recorded by Gairdner [61]; to the southeast de Schauensee [62] has recorded it from Sriracha. It is much less common than *C. sinensis intermedius*.

Herbert [63] found two nests of five and six eggs at Bun Khang (Samkok), June 28 and July 19; and he received one set of three fresh eggs from Ban Yang (Tachin), August 15; he gives a description of the nest and eggs.

CENTROPUS BENGALENSIS JAVANENSIS (Dumont)

Cuculus javanensis Dumont, Dict. Sci. Nat., vol. 11, p. 144, 1818 (Java).

One immature female, Yala, Patani, February 2, 1931.

Dr. W. L. Abbott took an adult male, Tyching, Trang, May 23, 1896; an immature female, Prahmon, Trang, April 2, 1896; and an adult female on the Dindings, Straits of Malacca, April 15, 1900.

The adult male taken at Tyching, Trang, was caught while sitting on a nest containing three eggs, in which incubation had commenced. These were saved and are now in the collection. The eggs are oval, dull white, with little or no gloss, and measure 30.2 by 25.3, 29.2 by 25, and 28.7 by 24.4 mm.

Three specimens (two females and one unsexed) from Java and one male from Banka are available for comparison.

The adult male from Trang agrees with the male from Banka and the unsexed specimen (almost certainly a male) from Java in having the black of the head and lowerparts with a greenish sheen rather than the purplish of *C. b. bengalensis*. The males in this species seem to be smaller than the females; this also is the case in other cuckoos.

The range of the form seems to be Peninsular Siam, Sumatra, Banka, Java, Bali, Borneo, Natuna Islands, and the Philippines.

The range in Peninsular Siam is not determined. It certainly goes north to Trang.

Stresemann [64] in his revision of the species includes in this form two specimens from Salanga (Puket).

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[61] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 150, 1915.

[62] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 259, 1934.

[63] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 306, 1924.

[64] Nov. Zool., vol. 19, p. 337, 1912.

CARPOCOCCYX RENAULDI Oustalet

Carpococcyx renauldi Oustalet, Bull. Mus. Hist. Nat. Paris, vol. 2, p. 314, 1896 (Kuangtri, Annam).

One immature male, Lat Bua Kao, eastern Siam, August 11, 1929.

Unfortunately no adult specimens are available for comparison. This genus consists of large, long-legged, ground cuckoos. It is very rare in collections.

The forehead and throat in the above specimen are russet; the crown, nape, and hindneck are black, with a purple sheen; a few blackish violet feathers are appearing on the jugulum; back and scapulars olive-gray; lower back dusky, with roods-brown tips and mottlings to the feathers; rump mixed white and orange-cinnamon, with narrow dusky crossbars; upper tail coverts dusky green; chest white, with narrow dusky irregular crossbars; breast white; sides and flanks like the chest, the flanks with some orange-cinnamon tips to the feathers; thighs white vermiculated with dusky; under tail coverts dusky with mikado-brown tips, the longer feathers dusky green with cinnamon tips; bastard wing dusky violet tipped with cinnamon; primary coverts dusky green with dusky violet along the outer margin and tipped with cinnamon; primaries dusky violet, becoming dusky greenish toward the base on the inner feathers and tipped with cinnamon; secondaries dark olive-gray, with greenish and purplish reflections; wing coverts like the back the greater darker and with cinnamon tips; tail dusky violet. The specimen is in molt. Only two old feathers of the tail remain, but two new ones are coming in and are about 2 inches long; in color they are like the old ones.

Stuart Baker[65] records a pair in the Herbert collection from Pak Chong; de Schauensee[66] lists a female from Pak Djong, about 60 miles west of Korat, collected April 5. Gyldenstolpe[67] says that it had recently been obtained in Peninsular Siam, but this must be an error, as Robinson and Kloss do not give it from there and I have seen no records.

The species ranges from Tonkin, Annam, Laos, and Cambodia to eastern Siam and probably southeastern Siam.

Family TYTONIDAE: Barn Owls

TYTO ALBA JAVANICA (Gmelin)

Strix javanica Gmelin, Systema naturae, vol. 1, pt. 1, p. 295, 1788 (Java).

Two males, Bangkok, October 17, 1923, and October 17, 1929; one female, Lam Klong Lang, Pak Chong, June 13, 1925; one male, Tha Luang, October 23, 1932.

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[65] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 441, 1919.

[66] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 574, 1928.

[67] Ibis, 1920, p. 596.

The three males are pure white below, sparsely marked with sagittate black spots; the female is light cinnamon-buff and more heavily marked with black spots. A male from Depok, Java, in the United States National Museum is darker above than the Siamese specimens; below it is a slightly deeper buff than the female from Siam. The Java male is also somewhat smaller; wing, 290 mm. The three males from Siam measure: Wing, 308, 305, and 305 mm; the female, 312 mm.

The Siamese and Javan specimens are somewhat different and I believe eventually will be recognized as belonging to different forms, but for the present I place them here as other authors have done. If anyone has compared mainland and Javan specimens in adequate series, I have not noted it.

Gyldenstolpe [68] records it as very abundant at Bangkok; Gairdner [69] from Petchaburi; Deignan [70] reports it rather common at Chiengmai; Herbert [71] gives it as very common at Bangkok and breeding in January and February and laying five or six eggs to a set.

The form ranges from Ceylon and India to Burma and south through the Malay Peninsula to Java.

PHODILUS BADIUS ABBOTTI Oberholser

Phodilus badius abbotti Oberholser, Journ. Washington Acad. Sci., vol. 14, p. 302, 1924 (Province of Wellesley, Federated Malay States).

One male, Nong Khor, near Sriracha, southeastern Siam, September 23, 1925; one male, Lat Bua Kao, eastern Siam, August 14, 1929.

Dr. Abbott purchased the type in Penang; it was said to have been shot in the Province of Wellesley.

Besides the above, the United States National Museum contains a female from the Raheng District, Siam. This small series agrees with the type of the form. A male from Buitenzorg, Java, while not differing much in color, is considerably smaller. The wing measures 178 mm. The wings of two males from Siam measure 199 and 203 mm; of the female, 224 mm; the type of *abbotti*, 198 mm.

Robinson [72] questions the distinctiveness of *abbotti* and unites it with *badius*. The measurements he gives show the Malay Peninsula specimens to be somewhat larger than those of Java and the sexes are not segregated. If his views should prove correct, the name for the Siamese birds would be *Phodilus badius badius* (Horsfield).

Gyldenstolpe [73] took a single specimen at Khun Tan. Chasen and Kloss [74] record a single female from Huey Yah Pla, Raheng District

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[68] Ibis, 1920, p. 754.

[69] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 150, 1915.

[70] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 163, 1931.

[71] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 326, 1926.

[72] Bull. Brit. Orn. Club, vol. 47, pp. 121-122, 1927.

[73] Ibis, 1920, p. 754.

[74] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 163, 1928.

(this is the female mentioned above). Apparently it is not recorded from Peninsular Siam, but it must occur there. Robinson and Kloss [75] say it is a bird of extreme rarity in the southern parts of the Peninsula.

The range of the form is the Malay Peninsula, north to Siam and Burma and east probably to Cochinchina.

Family STRIGIDAE: Typical Owls

STRIX INDRANEE MAINGAYI (Hume)

Syrnium maingayi HUME, Stray Feathers, vol. 6, p. 27, 1878 (Malacca).

Strix indranee rileyi ESTELLE KELSO, Auk, vol. 54, p. 305, 1937 (Kao Nok Ram, Trang).

Dr. W. L. Abbott collected a female at Lay Song Hong, Trang, September 28, 1896, and a female at Kao Nok Ram, 2,000 feet, Trang, in 1899 (exact date not given).

He states that the colors of the soft parts are: Iris dark brown; bill pale horny greenish; claws horny white at base, darkening to dark brown at tips.

These two specimens are much darker than *laotiana*, the bars below broader and the breast crossed by a rather broad band of dark brown. The dark breast band is broad in one, the cross rays showing only faintly in the center; in the other it is more or less interrupted with cross-rayed feathers, but the dark cross rays are broader than on the breast. The wings measure 362 and 369 mm.

Robinson and Kloss [76] record a specimen from Chong, Trang; Baker [77] lists it from Tung Song; Robinson and Kloss [78] state that they have six specimens from Trang southward to Selangor, the majority from the Malay States of which Kloss [79] had previously given a list.

The form ranges from southern Tenasserim southward through Peninsular Siam to the Malay States. *Strix indranee bartelsi* (Finsch) is peculiar to Java.

A specimen of this owl in the United States National Museum is darker above than *maingayi*, and the lowerparts are strongly washed with rufous; the line above the disk also is strongly rufous. It is a very distinct race.

Some recent authors have made this and related races forms of *Strix leptogrammica*, the nominate form of which is confined to Borneo, but the latter is a much smaller species, with the upperparts barred rufous and blackish, the chest and throat uniform rufous, the toes more extensively bare. The Indian and Siamese races have nothing to do specifically with this small species.

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[75] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 108, 1923.

[76] Ibis, 1911, p. 31.

[77] Journ. Nat. Hist. Soc. Siam., vol. 4, p. 26, 1920.

[78] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 108, 1923.

[79] Journ. Federated Malay States Mus., vol. 4, p. 230, 1911.

Strix leptogrammica has been divided into four nominal races as follows:

Strix leptogrammica leptogrammica Temminck (Borneo).
Strix leptogrammica myrtha Bonaparte (Sumatra).
Strix leptogrammica niasensis Salvadori (Nias).
Strix leptogrammica nyctiphasma Oberholser (Banjak Islands, western Sumatra).

STRIX INDRANEE LAOTIANA Delacour

Strix newarensis laotianus Delacour, Bull. Brit. Orn. Club, vol. 47, p. 11, 1926 (Xieng-Khouang, Laos).

Two females, Pak Chong, eastern Siam, November 15 and 18, 1925.

This owl is new to the Siamese bird list. The form is much paler than *maingayi* of Peninsular Siam, and the neck collar above is wider and more extensively barred with a paler buff; the scapulars and secondaries are more pronouncedly barred, and the latter are more broadly tipped with white; below it is paler and the dark bars narrower, breast band absent; the facial disk is lighter.

The two specimens are not exactly alike. One is a lighter brown above, the cross rays more fulvous, the light bars on the scapulars darker and more fulvous; below the differences are not so great. The wings measure 378 and 375 mm.

The United States National Museum possesses an immature specimen from Haut Donai, Annam, taken May 26. It is nearly fully grown but still retains some of the nesting down on the pileum, mantle, throat, and rump. The new postjuvenal plumage that has already appeared is similar to that of the Pak Chong specimens.

So far this form is known only from a few specimens taken in south and central Annam, Laos, and eastern Siam.

STRIX ORIENTALIS ORIENTALIS Shaw

Strix orientalis Shaw, General zoology, vol. 7, pt. 1, p. 257, 1809 (China).

Dr. W. L. Abbott took a female (?) at Lay Song Hong, Trang, September 1, 1896. The wing measures 355 mm. He describes the soft parts as: Iris blackish brown; bill and cere dull black; toes black, claws horny black.

A single female from Java has more buff to the bases of the feathers above and the white spotting is more pronounced; the wing measures 325 mm. It represents *Strix orientalis seloputo* Horsfield.

S. o. orientalis ranges from southern Burma south through the Malay Peninsula to Sumatra and east through central Siam to Cochinchina. The type locality "China" is probably an error, as it is not known from there.

Bonhote [80] records it from Bukit Besar, Jalor, Patani; Ogilvie-Grant [81] from Ban Sai Kau and Biserat, Patani; Robinson and Kloss [82] from Chong, Trang; Williamson [83] from Bandon; Robinson and Kloss [84] from Koh Boi Yai, Puket; Baker [85] from Kong Wang Hip. All these localities are in Peninsular Siam. Herbert [86] collected two eggs from two nests in the Samkok District, February 23, 1914, and February 15, 1916. Robinson and Kloss [87] state that this owl is commoner in the northern parts of the Peninsula than farther south. It probably extends through southern Siam, as it occurs in Cochinchina.

KETUPA KETUPU AAGAARDI (Neumann)

Bubo ketupu aagaardi Neumann, Bull. Brit. Orn. Club, vol. 55, p. 138, 1935 (Bangnara, Patani, Peninsula Siam).

One male and one female, Bangnara, Patani, May 25, 1924, and July 5, 1926.

Dr. W. L. Abbott collected a male at Prahmon, Trang, April 4, 1896 and a female and male in Tenasserim (Tanjong Badak, December 1903; Boyces Point, February 9, 1904). He gives the soft parts as: Iris orange-yellow; bill black, cere horn blue or pale brown (in one male and one female), pale leaden, cere leaden (in one male); feet dirty whitish (in one male, not given for the other two).

The specimen in which the bill is stated to have been pale leaden has now faded to a horn color, quite different from the other two skins taken by Dr. Abbott. The specimen appears to be adult.

The above five specimens are paler above and below than two specimens examined by me from Java, which confirms the claims of the describer. The two specimens from Bangnara are paler below, with narrower black shaft streaks, than the male from Trang and the male and female from Tenasserim. The female from Bangnara is very light colored above and the shaft streaks below are very narrow. It is probably a bird of the year that is fully grown but has not acquired the full adult plumage.

There are numerous records for Peninsular Siam from Patani north to Pakchan; Robinson [88] reports that Kloss obtained it at Ok Yam in southeastern Siam.

One of Kloss's specimens from Ok Yam was afterward acquired by the United States National Museum. It is a male, very dark; darker above and below than the two Javan specimens before me and with broader dark shaft stripes below.

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[80] Proc. Zool. Soc. London, 1901, vol. 1, p. 58.

[81] Fasciculi Malayenses, pt. 3, p. 112, 1905.

[82] Ibis, 1911, p. 30.

[83] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 26, 1918.

[84] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 91, 1919.

[85] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 26, 1920.

[86] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 326, 1926.

[87] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 108, 1923.

[88] Ibis, 1915, p. 729.

Two males from Sumatra agree in color with the Trang male and the male and female from Tenasserim. The northern specimens along with those from Sumatra may represent a form distinct from that from the southern part of the Malay Peninsula, but without more material from the latter locality it is better for the present that they be left with *aagaardi*.

The wings in the above series measure: Two males from Sumatra 345, 350 mm; one male from Trang, 345 mm; one male from Tenasserim, 360 mm; one male from Ok Yam, 355 mm; one male from Bangnara, Patani, 325 mm; one female from Bangnara, Patani, 325 mm; one male from Java, 350 mm; the female from Java, 350 mm. The two other females are not suitable for measuring.

The range of *Ketupa k. aagaardi* may be regarded as Indo-China through southern Siam to Tenasserim and south through Peninsula Siam to the Malay States and Sumatra. *Ketupa ketupu ketupu* (Horsfield) is confined to Java. *Ketupa ketupu pageli* (Neumann) occurs in northeastern Borneo. *Ketupa ketupu minor* Buttikofer is confined to Nias Island.

HUHUA NIPALENSIS (Hodgson)

Bubo nipalensis Hodgson, Asiat. Res., vol. 19, p. 172, 1836 (Nepal).

One male, Ban Den Ja, March 1, 1929, found in dense forest; wing, 410 mm.

Gyldenstolpe [89] says that authentic specimens of this fine owl have been taken only at Khun Tan; Chasen and Kloss [90] record a male from Tong Sulin, Raheng District, Gairdner [91] gives it for the Petchaburi District.

The species ranges from the Himalayas east to Assam, central Burma, south to Tenasserim, and east to Siam, Laos, and upper Tonkin.

OTUS BAKKAMOENA LETTIA (Hodgson)

Scops lettia Hodgson, Asiat. Res., vol. 19, p. 176, 1836 (Nepal).

One male, Mekhan, February 6, 1932; one female, Khun Tan, October 21, 1929; two males and three females, Bangkok, February 12 and May 6, 1924; April 5, August 4, and September 7, 1926; one male, Sam Roi Yot, November 17, 1932; one immature male, Koh Lak, June 7, 1933; one female, Kao Sabap, October 27, 1933.

The wings of the four males measure: 156, 159, 160, and 167 mm; of the four females, 162–164 (163) mm. The female from Kao Sabap is darker above than any other in the series.

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[89] Ibis, 1920, p. 751.

[90] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 164, 1928.

[91] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 150, 1915.

I doubt whether the above series really belongs to *lettia*. They do not seem to fit Stuart Baker's [92] diagnosis of the form, but I have no topotypical specimens for comparison and so assign them here.

The form ranges from Nepal to eastern Assam, eastern Bengal, Burma, Siam proper, and southeast to Cambodia and central and southern Annam.

Gyldenstolpe [93] records it from Den Chai and later [94] from Pak Koh, Chum Poo, and Khun Tan; Robinson [95] from Pulo Dayang Bunting, Langkawi Group, December; Chasen and Kloss [96] from the Raheng District; Lowe [97] from the Meping; de Schauensee [98] from Chiengmai, Chantabun, Tap Chang, Petrieu, and Bangkok; a female taken by him at Chiengmai, February 2, had eggs in the oviduct ready to be laid. Herbert [99] found it a common breeder in the Bangkok District but more so in the Samkok District, the nesting season extending from late in January to early in March and the set usually consisting of three eggs, sometimes four.

It is probably only a winter visitor in Peninsular Siam.

OTUS BAKKAMOENA LEMPIJI (Horsfield)

Scops lempiji Horsfield, Trans. Linn. Soc. London, vol. 13, p. 140, 1821 (Java).

Dr. W. L. Abbott collected a male and two females at the Rumpin River, Pahang, July 15–22, 1902, and there is a male collected by C. B. Kloss at Tanjong Kalong, Singapore, April 3, 1900, in the United States National Museum. Two of the Rumpin River specimens are immature. One of the females is apparently adult. The male from Singapore is adult and has a cinnamon-buff suffusion both above and below that cannot be matched by any specimen in a series from Java; the adult female from Pahang is even a deeper cinnamon-buff than the male and the black spotting is much reduced below. The wing in the male measures 143 mm; in the adult female, 145 mm. These four specimens doubtfully belong to this form, but I do not know where else to place them.

This is a small dark form found in southern Peninsular Siam. It has been recorded from the Langkawi Islands and Bandon, but the records from Bangkok and Koh Mesan prove to belong to two other forms.

Robinson [1] gives the range as southern Tenasserim south to the Malay States, Sumatra, and Java.

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[92] The fauna of British India, Birds, ed. 2, vol. 4, p. 427, 1927.

[93] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 61, 1913.

[94] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 120, 1916.

[95] Journ. Federated Malay States Mus., vol. 7, p. 145, 1917.

[96] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 164, 1928.

[97] Ibis, 1933, p. 483.

[98] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 268, 1934.

[99] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 327, 1926.

[1] The birds of the Malay Peninsula, vol. 1, p. 79, 1927.

I have seen no Siamese specimens of this form but have examined a fair series from Java. The wings of four females from Java measure 135–146 (140.2) mm; two males, 139–141 mm.

OTUS BAKKAMOENA CONDORENSIS Robinson and Kloss

Otus bakkamoena condorensis ROBINSON and KLOSS, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 81, 1930 (Pulo Condore).

One male, Pak Chong, eastern Siam, November 28, 1929; one female, Pran, April 2, 1931.

These two specimens agree with a male from Koh Mesan off Cape Liant, Siam, collected by C. Boden Kloss, November 1, 1916, in being very pale below and in having a white background with brownish stippling and a few scattering blackish shaft marks. They are quite different from the form found around Bangkok (*Otus b. lettia*). The specimens of the latter before me have the lower parts clay color, varying to a light clayey buff.

The wing of the male from Pak Chong measures 159 mm; that from Koh Mesan, 158 mm; and the female from Pran, 151 mm. The three specimens seem to fit the description of *condorensis*, which evidently is a pale southeastern race. The female from Pran is puzzling, as Dr. Smith also collected *Otus bakkamoena lettia* from this general region.

The exact range is not definitely known.

OTUS SUNIA MALAYANUS (Hay)

Scops malayanus HAY, Madras Journ. Lit. and Sci, vol. 13, pt. 2, p. 147, 1844 (1845) (Malacca).

One female, Bangkok, January 16, 1925; one male and one female, Koh Tao, January 2, 1927; one male, Tha Chang, March 20, 1917.

The red and the gray phases and an intermediate phase are all represented in these specimens. There is no adequate series available for comparison. A male (*Otus sunia modestus*?) from Suifu, Szechwan, seems exactly to match the male from Koh Tao, except that it is darker on the chest; wing, 146 mm. The wing of the Koh Tao male measures 142.5 mm.

Robinson [2] records it from Langkawi; Robinson and Kloss from Trang [3] and Junkseylon (Puket)[4]; Baker [5] from Krabin, central Siam. Robinson [6] states that this form is apparently only a winter visitor to the Malay States. It may be that *modestus* is really only a synonym.

The form ranges from Singapore north to Tenasserim and central Siam.

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[2] Journ. Federated Malay States Mus., vol. 7, p. 145, 1917.

[3] Ibis, 1911, p. 31.

[4] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 94, 1919.

[5] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 26, 1920.

[6] The birds of the Malay Peninsula, vol. 1, p. 80, 1927; vol. 2, p. 38, 1928.

OTUS SAGITTATUS (Cassin)

Ephialtes sagittatus Cassin, Proc. Acad. Nat. Sci. Philadelphia, vol. 4, p. 121, 1848 (Malacca); Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 2, p. 96, pl. 12, fig. 2, 1852.

One male, Kao Soi Dao, Trang, January 5, 1934.

This is the first specimen taken of this rare owl on Siamese territory.

Stuart Baker [7] speaks of Herbert taking numerous eggs of this species around Samkok, but I cannot find that he even took the bird, much less the eggs. Mr. Baker may have incorporated matter belonging to another species.

The species ranges from Tenasserim south to the Malay States.

It is peculiarly marked. The forehead, as far back as the middle of the orbit, and superciliaries are white; above tawny, deepening to russet on crown and nape, sparsely covered with sagittate spots of light fulvous, bordered on the lower margin with black; cheeks white, bordered posteriorly with black; throat white, the feathers barred with seal brown and fulvous; below clay color, with sagittate seal-brown bars or spots, the chest with fine dusky barring; the eyes are surrounded or nearly so by a mars-brown circle, becoming blackish on the upper lid in front. The feathering on the tarsi does not quite reach the toes. The wing measures 187 mm. This is not a complete description, but it is sufficient for present purposes.

This owl is so peculiar that it is a question whether it really belongs in this genus or whether it should be removed and a new genus erected for it.

ATHENE BRAMA PULCHRA Hume

Athene pulchra Hume, Stray Feathers, vol. 1, p. 469, 1873 (Pegu).

One male and one female, Rajaguri, April 10, 1926; two males, Muang Kanburi, April 7 and September 11, 1928; one female, Nakon Panom, March 8, 1929; one male, Udon, March 19, 1929.

The series is quite uniform, both above and below.

This bird is recorded by Herbert as rather common about 40 miles north of Bangkok and northward. His specimens have been remarked upon by Baker,[8] Chasen and Kloss [9] record it from Raheng; Deignan [10] reports it common at Chiengmai. Herbert [11] found it breeding in the Samkok district in January and February, laying three or four eggs to a set, and the editor noted that the form had recently established itself in the Bangkok district. De Schauensee [12] took a series on his third expedition at Chiengmai, Sriracha, Kengkoi, and Tung Sio. A female taken at Sriracha on February 8 had an egg in the oviduct ready to be laid, and a fully fledged young male was taken at Kengkoi on May 5.

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[7] The fauna of British India, Birds, ed. 2, vol. 4, p. 431, 1927.

[8] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 27, 1920.

[9] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 164, 1928.

[10] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 164, 1931.

[11] Journ. Siam Soc. Hist. Suppl., vol. 6, p. 328, 1926.

[12] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 268, 1934.

The form ranges from central and south Burma to Siam, Cambodia, Cochinchina, and Lower Laos. Apparently it occurs locally nearly all over Siam except the Peninsular part of the country, from where I have seen no records.

GLAUCIDIUM CUCULOIDES BRUGELI Parrot

Glaucidium cuculoides brugeli Parrot, Orn. Ges. Bayern, vol. 8, p. 104, 1907 (Bangkok, Siam).

One male and one female, Ban Sadet, Sriracha, May 30 and 31, 1925; one male and one female, Lam Klong Lang, Pak Chong, June 12 and 13, 1925; one male and three females, Pak Chong, eastern Siam, November 17–19, 1925, April 29, 1926, November 28, 1929; three females, Nong Khor, near Sriracha, September 27, 1925, February 6 and 12, 1927; one male, Ban Nakae, March 3, 1929; one male, Sakon Nakon, March 12, 1929; one male, Knong Phra, April 13, 1929; one male, Ban Tarn Dam, southeastern Siam, March 5, 1930; one male, Nong Yang, November 6, 1931; two males, Hupbon, October 27 and November 3, 1931; one male, Bung Borapet, July 1, 1932; one female, Chieng Dao, January 29, 1932; one male, Mekhan, February 7, 1932; one female, Ban Takaw, October 22, 1932; one male, Khonka Valley, January 25, 1933; one female, Vichienburi, February 26, 1934; one male, Kao Luang, Nakon Sritamarat, October 6, 1930. Dr. Smith also took a male on the Pai River, Burma, January 11, 1933, that seems to be indistinguishable from the Siamese specimens.

Just how far this form extends south in Peninsular Siam, I do not know. Dr. Smith secured it from Kao Luang, Nakon Sritamarat, as listed above, and it has been taken nearly all over the country from this point north to Burma and to the east into Cochinchina.

Herbert[13] collected two sets of three eggs each from near Bangkok—one from Ban Laing, January 17; the second from Poh Teng, February 3; and a single egg from Koh Yai, February 7.

GLAUCIDIUM BRODIEI TUBIGER (Hodgson)

Noctua tubiger Hodgson, Asiat. Res., vol. 19, p. 175, 1836 (Nepal).

One female, Khun Tan Mountains, 4,000 feet, November 19, 1928; two males and one female, Khun Tan, 4,000 feet, February 25–March 3, 1932; one male, Huey Yang, Sriracha, August 3, 1932; one female, Kao Sabap, November 30, 1933. Dr. Smith describes the soft parts as: Iris light yellow; bill greenish yellow; toes greenish, claws dark brown.

The female from the Khun Tan Mountains agrees fairly well with a male from Tenasserim; in fact the dark bars above are even darker in the Siamese bird. The wing in the Khun Tan Mountain female measures 95.5 mm; the female from Khun Tan, 94 mm. The Khun Tan female is grayer above and the pileum is barred rather than spotted as in the other female and the Tenasserim male. The two males from Khun Tan have the pileum barred rather than spotted. In one the crossbars are white with scattering small white spots; in the other the crossbars and spots are fulvous. The wings in the two males measure 90 and 86 mm.

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[13] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 329, 1926.

The male from Sriracha has the mantle russet and unbarred; only the scapulars are barred with blackish; the pileum olive-brown with scattering fulvous spots; the feathers along the bend of the wing beneath primrose yellow. It is evidently an immature bird. The male from Khun Tan, with the wing 86 mm, has the carpal feathers yellowish and is probably a young bird also.

The female from Kao Sabap is the darkest above of any of the specimens taken by Dr. Smith, and the bars on the back are a deeper fulvous; the throat, jugulum, center of the breast, and bend of the wing are light sulphur yellow. It is quite different from the other specimens and may represent a different form, but owls are very variable.

The form ranges from Nepal to eastern Assam and south to Burma, Siam, and the Malay Peninsula, east to Indo-China, and southern China.

A pair from Fukien are grayer above and have paler neck collars than in the Siamese series.

Gyldenstolpe[14] has recorded this owl from Khun Tan and Pah Koh in the north; Robinson[15] from Kao Nong, Bandon; Robinson and Kloss[16] from Tapli, Pakchan; de Schauensee[17] from Ban Jong, 10 kilometers south of the Shan States border. Deignan[18] reports it from Doi Sutep, between 3,500 and 5,500 feet.

NINOX SCUTULATA BURMANICA Hume

Ninox burmanica HUME, Stray Feathers, vol. 4, p. 285, 1876 (Burma).

One female, Bangkok, January 19, 1924; two males, Nong Khor, near Sriracha, March 23, 1926, and February 11, 1927; one male and one female, Udon, February 18, 1929; one female, Lat Bua Kao, August 11, 1929; one male, Doi Nangka, November 7, 1930; one male and one female, Muek Lek, April 26, 1933; one male, Lamton Lang, May 25, 1934.

All the above series appear to be fairly uniform in color and agree with a female in the United States National Museum identified by C.

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[14] Ibis, 1920, p. 754.

[15] Journ. Federated Malay States Mus., vol. 5, p. 91, 1915.

[16] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 112, 1923.

[17] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 576, 1930.

[18] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 164, 1931.

Boden Kloss from Koh Kram, Inner Gulf of Siam. The wings of the males measure 210, 215, 215, 216, and 217 mm; the females, 205, 210, 212, and 216 mm.

The range of the form is Assam south of the Bramaputra, Burma, the Shan States, Siam, and all Indo-China.

This is the resident form of Siam proper. It is not known where it meets the next form in southwestern Siam or how far it extends to the northeast. All records are too uncertain to give.

Family PODARGIDAE: Frogmouths

BATRACHOSTOMUS STELLATUS (Gould)

Podargus stellatus Gould, Proc. Zool. Soc. London, 1837, p. 43 (Java, error; Hartert [19] substitutes Malacca).

Dr. W. L. Abbott took a male on the Endau River, Pahang side, June 27, 1901; wing, 124 mm. He gives the soft part as: Iris straw yellow; eyelid-brownish yellow; feet pale brownish fleshy; inside of mouth pale bluish fleshy; upper mandible horny brown, lower mandible pale brownish fleshy.

This specimen is hazel above; the nuchal band posteriorly is bordered by black; the white markings on the scapulars and wing coverts are bordered by black, both posteriorly or anteriorly; the throat is ochraceous-tawny, with faint irregular dusky bars, the lower throat with a few buffy subterminal spots; the chest is orange-cinnamon, with concealed buffy subterminal centers to the feathers; the breast and belly are cartridge buff, the feathers with narrow borders of orange-cinnamon, giving an occelated appearance; tail roods brown, barred with a much lighter brown, each bar bordered with a narrow dusky line above and below. Wing, 124 mm. This is not a complete description but is sufficient for present purposes. It does not agree with Hartert's description.[20]

Three Malacca trade skins in the United States National Museum are darker, and in two of them the white nuchal collar is almost lacking.

The species is found in the Malay States, Sumatra, and Borneo.

I know of no Siamese record, but it probably occurs along the southern border of Peninsular Siam.

BATRACHOSTOMUS AFFINIS Blyth

Batrachostomus affinis Blyth, Journ. Asiat. Soc. Bengal, vol. 16, p. 1180, 1847 (Malacca).

Dr. W. L. Abbott collected a male on the Rumpin River, Pahang, eastern Malay Peninsula, June 5, 1902; wing, 111 mm. He describes the soft parts as: Iris pale yellow; feet brownish fleshy; upper mandible fleshy brown, lower mandible pale yellowish fleshy; angles of mouth pale yellow; inside of mouth pale fleshy.

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[19] Nov. Zool., vol. 9, p. 542, 1902.

[20] Catalogue of the birds in the British Museum, vol. 16, p. 639, 1892.

This is considerably smaller than *stellatus* and differently marked, the throat being white barred with black.

Gairdner[21] records it from the Petchaburi District; Robinson and Kloss[22] record a male from Tasan, Chumpon, and mention a female in Mr. Williamson's collection from Naihoot, Langsuen. They express some doubts of its identity, however.

The species occurs from southern Tenasserim through Peninsular Siam to the Malay States and Borneo.

Family CAPRIMULGIDAE: Goatsuckers

CAPRIMULGUS MACRURUS BIMACULATUS Peale

Caprimulgus bimaculatus PEALE, U. S. Exploring Expedition, vol. 8, p. 170, 1848 (Singapore).

Caprimulgus macrurus anamesus OBERHOLSER, Proc. U. S. Nat. Mus., vol. 48, p. 593, 1915 (Tanjong, Kalong, Singapore Island).

Four males and four females, Bangkok, January 19 and July 23 1924, August 3–6, 1926; one male and one female, Lem Sing, Chantabun, June 8, 1926, March 6, 1930; one female, Sriracha, April 20, 1934; one male, Knong Phra, April 14, 1929; one male, Aranya, July 17, 1930; one male, Kao Pae Pan Nam, Lomsak, February 18, 1934; one male, Patalung, July 5, 1929; two males and one female, Bangnara, Patani, June 2, 1924, July 3, 19, 1926.

Dr. W. L. Abbott obtained five males and two females in Trang (Prahmon, March 13 and 24, April 14; Lay Song Hong, September 6 and December 19, 1896; near Kao Nok Ram, January 5, 1899, and Trang, January 28, 1899); one male and two females, Singapore Island, May 15–26, 1899, and two males, Telok Besar, Tenasserim, March 1, 1904. There are two males and one female, collected by C. Boden Kloss at Tanjong Kalong, Singapore, November 2–26, 1899, in the United States National Museum. Dr. Abbot gives the soft parts as: Iris dark brown (bill fleshy brown, tip black; feet fleshy brown, claws dark horny brown.

Many of the Siamese specimens are in molt or immature and not suitable for measurement or comparison. These I have disregarded. Starting with the Siamese series (mostly from Bangkok) there is a gradual diminution of size in specimens from there down Peninsular Siam until Singapore is reached, but the difference is not great and not worthy of being recognized by name.

The wings of four males from Siam proper measure 203–209 (206) mm; two males from Tenasserim, 197–205 mm; five males from Trang, 190–200 (196.2) mm; three males from Singapore, 185–191 (188) mm; the type of *bimaculatus*, 198 mm.

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[21] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 150, 1915.

[22] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 118, 1923.

The form has been recorded from northern Siam south through Peninsular Siam to the Malay States. Herbert [23] reports it breeding at Samkok, the eggs being deposited from February to August 13. Dr. W. L. Abbott took a set of two eggs at Maliwun, Tenasserim, March 8, and another set of two eggs at Telok Besar, Tenasserim, March 14.

The race is apparently resident where found and ranges from Assam, Burma, Yunnan, and southwestern China, south to Siam, the Malay Peninsula, and Indo-China. Other forms occur on the islands from Java south to Australia and in India.

CAPRIMULGUS INDICUS JOTAKA Temminck and Schlegel

Caprimulgus jotaka TEMMINCK and SCHLEGEL, *in* Siebold's Fauna Japonica, Aves p. 37, pls. 12, 13, 1847 (Japan).

One female, Mekhan, February 8, 1932.

This form breeds in Japan, the greater part of China, and the hills of Assam and migrates south as far as New Guinea to winter. In Siam it has been recorded as a migrant from Teratau, Langkawi, and Trang.

CAPRIMULGUS MONTICOLUS BURMANICUS Baker

Caprimulgus monticolus burmanicus BAKER, Bull. Brit. Orn. Club, vol. 51, p. 102, 1931 (Upper Chindwin, Burma).

Dr. W. L. Abbott collected an adult female at Champang, Tenasserim, December 20, 1903.

In this specimen the chest is marked with sagittate spots of cinnamon, and the feathers of the hindneck have a rather broad orange-cinnamon central stripe at the tip, forming an irregular collar. Wing, 187 mm.

This nightjar can be readily distinguished from the other forms inhabiting Siam by the two outer tail feathers in the male being mostly white, only the extreme tips mottled dusky. In the female the outer tail feathers are dusky mottled cinnamon, with irregular black bars. It is larger than *asiaticus*.

The range assigned this form by the describer is Sikkim to eastern Assam, eastern Bengal, the whole of Burma, Siam, Cambodia, and Cochinchina. De Schauensee reports taking a female at Nakon Nayok [24] and on his third expedition he secured it at Chiengmai and Tamuang.[25] Baker [26] records it from Paknampho; Barton [27] from the Raheng District; Lowe [28] from 20 miles west of Kempempet. Gyldenstolpe [29] says that it has been met with only in the northern parts of Siam and seems to be rare. Apparently it is resident throughout the year.

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[23] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 303, 1924.

[24] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 576, 1929.

[25] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 267, 1934.

[26] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 437, 1919.

[27] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 107, 1914.

[28] Ibis, 1933, p. 482.

[29] Ibis, 1920, p. 582.

CAPRIMULGUS ASIATICUS SIAMENSIS de Schauensee

Caprimulgus asiaticus siamensis DE SCHAUENSEE, Proc. Acad. Nat. Sci. Philadelphia, vol. 85, p. 373, 1933 (Feb. 21, 1934) (Chiengmai, Siam).

One female, Bangkok, May 8, 1926; one male, Bung Borapet, June 21, 1932; four males, one female, and one unsexed, Sam Roi Yot, November 16–19, 1932; one unsexed, Koh Lak, June 8, 1933.

Dr. Smith took an egg at Bung Khoa Den, March 17, 1933, that is light vinaceous-cinnamon, with pale brownish-drab under spots over the whole egg, overlaid with orange-cinnamon spots of various sizes, but none very large. It measures 28 by 21.2 mm.

This form is resident all over Siam proper and probably extends to Indo-China. Robinson and Kloss [30] say that it does not occur south of Koh Lak. Herbert [31] reports it breeding at Samkok, Ayuthia, and Bangkok from February to August 4.

LYNCORNIS CERVINICEPS CERVINICEPS Gould

Lyncornis cerviniceps GOULD, Icones avium, pt. 2, pl. 14, 1838 (China or adjacent islands; Trang [32]).

One male and one female, Pang Sok, August 25, 1926; one female, Sakeo, near Krabin, May 3, 1928; one female, Lat Bua Kao, August 4, 1929; one male and one female, Aranya, July 17, 1930.

Dr. W. L. Abbott took three males and two females in Trang (Prahmon, April 8; Tyching, July 20, 21, 1896; Trang, February 25 and March 2, 1899). There is a female in the United States National Museum from Klong Yai, southeastern Siam, January 7, 1915, collected by C. Boden Kloss. Dr. Abbott describes the soft parts as: Iris dark brown; feet dark fleshy brown.

Robinson and Kloss [32a] report it fairly common all over Peninsular Siam, except Patani; Gyldenstolpe [33] records it from Khun Tan and Hat Sanuk, where a nest was found on February 18 with one hard set egg.

This beautiful nightjar extends from Assam and Burma to Siam, the Malay Peninsula, and Indo-China. It probably occurs in suitable localities throughout Siam and is nonmigratory.

The female seems to have more russet in the plumage and the pileum buffier than in the male.

LYNCORNIS TEMMINCKII Gould

Lyncornis temminckii GOULD, Icones avium, pt. 2, pl. [16] and text, 1838 (Borneo).

Dr. W. L. Abbott collected two females on Singapore Island, May 15 and 30, 1899, and a male and female, Endau River, east coast of

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[30] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 141, 1923.

[31] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 302, 1924.

[32] Robinson and Kloss, Journ, Nat. Hist. Soc. Siam, vol. 5, p. 140, 1923.

[32a] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 140, 1923.

[33] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 107, 1916.

Johore, June 27, 1901. He gives the soft parts as: Iris dark brown; bill pale fleshy, dark brown at tip; feet dark brown.

This smaller species of *Lyncornis* is confined to the southern end of the Malay Peninsula from Penang southward, Sumatra, Nias, Banka, and Borneo. Apparently it has never been recorded from Peninsular Siam, but it occurs so close to the border that there is a possibility of it being taken there.

It can be easily distinguished from the larger species by smaller size, shorter tail, and darker-colored crown. The wing in *temminckii* measures about 210 mm; in *cerviniceps*, about 300 mm or more.

Family HEMIPROCNIDAE: Crested Swifts

HEMIPROCNE CORONATA (Tickell)

Hirundo coronata TICKELL, Journ. Asiat. Soc. Bengal, vol. 2, p. 580, 1833 (Borabhum and Dholbhum, west of Calcutta, India).

One female, Ban Kang, December 31, 1928; one female, Ta Pra, Korat, February 10, 1929; four males and one female, Mekhan, February 6–8, 1932; one female, Khun Tan, 4,500 feet, February 14, 1932; one male, Mae Hong Sorn, January 10, 1933.

This species extends from India to Burma, the Shan States, northern, and eastern Siam, and Indo-China. In Siam, apparently, it is confined to the hill forests of the northwest, northern, and eastern parts of the country.

HEMIPROCNE LONGIPENNIS HARTERTI Stresemann

Hemiprocne longipennis harterti STRESEMANN, Nov. Zool., vol. 20, p. 339, 1913 (Deli, Sumatra).

One male, one female, and one immature female, Bangnara, Patani, July 4 and 5, 1926; one female, Bukit, Patani, January 25, 1931; one male, Ban Kiriwong, July 20, 1928; one male, Sichol, Bandon, May 19, 1930; one male and one female, Kao Soi Dao, Trang, January 7 and 20, 1934.

Dr. W. L. Abbott collected three males and four females in Trang (Tyching, May 22 and June 4, 1896; Lay Song Hong, September 6–December 17, 1896; and Trang, March 4, 1899); one male and two females in Trengganu (Tanjong Dungun and Dungun River, September 21, 1900; Kemamun River, October 1, 1900). He gives the soft parts as: Iris dark brown; bill and claws black; feet dark purple, leaden, or fleshy brown, soles fleshy.

Oberholser[34] assigns Malay Peninsula specimens to his race *H. l. anochra* from the Natuna Islands, but as there are only two specimens from Sumatra in the United States National Museum and the series from the Anamba and Natuna Islands is small, I prefer to consider the

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[34] U. S. Nat. Mus. Bull. 159, p. 44, 1932.

Malay Peninsula birds the same as those of Sumatra as previous authors have done. After measuring and comparing the various specimens, except from the islands off the west coast of Sumatra, I can detect little or no difference between specimens from Sumatra, the Malay Peninsula, Rhio Archipelago, the Anambas, and Natuna Islands, Banka, and Borneo, but from the last two localities there are not enough specimens to decide. The form found in Java, *H. l. longipennis*, is smaller and the gray of the rump extends farther foward on the back.

Hemiprocne longipennis harterti ranges from Tenasserim and southwest Siam south through the Malay Peninsula and Sumatra to Banka, the Rio Archipelago, Anamba, and Natuna Islands, and Borneo. Other forms occur on the islands off the west coast of Sumatra and in Java and Bali. Robinson and Kloss[35] state it is common in northwestern and Peninsular Siam; de Schauensee[36] records it from Nakon Sritamarat, June.

HEMIPROCNE COMATA COMATA (Temminck)

Cypselus comatus Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 4, livr. 45, pl. 268, 1824 (Sumatra).

One male and one female, Ban Kiriwong, July 13 and 25, 1928; one male and two females, Kao Chong, Trang, August 27, 1933.

Dr. W. L. Abbott collected a male at Tyching, Trang, July 22, 1896; a male and a female on the Dindings, Straits of Malacca, April 14, 1900.

The range of this form extends from southern Tenasserim south through the Malay Peninsula to Sumatra, the islands off the west coast of Sumatra, the Rhio Archipelago, the Natuna Islands, and Borneo. Robinson and Kloss[37] report it fairly abundant in Trang and the rest of the Peninsula; de Schauensee[38] records a male from Nakon Sritamarat, June 4.

The form occurring in the Philippines has been separated as *Hemiprocne comata major*. It is larger than *H. c. comata* and the white on the belly is more extensive.

Family MICROPODIDAE: Swifts

MICROPUS PACIFICUS COOKI (Harington)

Cypselus pacificus cooki Harington, Bull. Brit. Orn. Club, vol. 31, p. 57, 1912 (Goteik Caves, northern Shan States).

One male and one female, Tha Lo, Bandon, September 24, 1931.

These two specimens are darker above, the light throat patch and rump band are restricted, and the dark shaft streaks on the throat are wider and more pronounced than in North China specimens. The wing in the male measures 169 mm; in the female, 166 mm.

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[35] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 145, 1923.

[36] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 266, 1934.

[37] Ibis, 1911, p. 38.

[38] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 266, 1934.

Whether this form breeds in Siam I am unable to say, as very few specimens have been collected, but since it has been found in Laos in the breeding season it would occur probably in northern Siam also.

De Schauensee [39] took a female on Chiengdao, 4,500 feet, January 19, and reports it common there at that time.

MICROPUS AFFINIS SUBFURCATUS (Blyth)

Cypselus subfurcatus Blyth, Journ. Asiat. Soc. Bengal, vol. 18, p. 807, 1849 (Penang).

One male, Koh Sichang, July 5, 1930; two females, Koh Lak, June 8, 1933. Dr. Smith also took a nest under a house on Koh Sichang, July 5.

There are also in the United States National Museum a female collected by Dr. W. L. Abbott at Prahmon, Trang, April 15, 1896, and a male collected by C. Boden Kloss at Tanjong Kalong, Singapore, July 8, 1900. Dr. Abbott describes the tarsi as fleshy brown, the toes and claws as black.

Robinson and Kloss [40] state that this is the common house swift of Peninsular Siam. Deignan [41] found it at Chiengmai in August. Forty [42] found a mummy in a cave on Koh Luan, a small island near Koh Phai, Inner Gulf of Siam. Gyldenstolpe [43] reports it rather common at Koh Lak; Robinson [44] found it rather common on the cliffs of Koh Muk, Trang, where it was breeding in January.

The form ranges from Assam and eastern Bengal eastward to Burma, Yunnan, southern China, as far as Fukien, Indo-China, Siam, the Malay Peninsula, Sumatra, Borneo, and Java.

CYPSIURUS BATASSIENSIS INFUMATUS (Sclater)

Cypselus infumatus Sclater, Proc. Zool. Soc. London, 1865, p. 602 (Borneo).

Two females, Bangkok, December 21, 1925, and May 9, 1934; one female, Bandon, January 4, 1927; one male and one female, Sichol, Bandon, May 17, 1930; one male and one female, Ban Nam Kien, Nan, April 21, 1930; three males and one female, Aranya, July 10, 1930; one female, Bung Borapet, March 25, 1933. Dr. Smith also took a pair at Vientiane, Laos, February 21, 1929, and a nest and two eggs from an areca palm at Ban Nam Kien, Nan, April 21, 1930.

Dr. W. L. Abbott took two males in Trang, February 10, 1897. He gives the soft parts as: Iris dark brown; bill black; feet dark purplish.

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[39] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 266, 1934.

[40] Journ. Nat. Hist. Soc. Siam, vol. 5, no. 2, p. 145, 1923.

[41] Journ. Nat. Hist. Soc. Siam Suppl., vol. 8, p. 163, 1931.

[42] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 74, 1916.

[43] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 107, 1916.

[44] Journ. Federated Malay States Mus., vol. 7, p. 155, 1917.

A male and two females from West Java in the United States National Museum are paler above than the Siamese series. No specimens from Borneo have been available for comparison.

The form ranges from Assam to Burma, Yunnan, Siam, the Malay Peninsula, Sumatra, Indo-China, Hainan, Java, and Borneo. In the Philippines a related form, *C. b. pallidior* (McGregor), occurs.

Robinson and Kloss,[45] writing of Peninsular and southwestern Siam, state that this swift is common among the Lontar palms wherever they occur; Deignan[46] reports it common at Chiengmai; Robinson[47] records it from Koh Samui and Koh Pennan; Herbert[48] collected a nest and two eggs at Ban Khang, February 15.

It seems to be common all over Siam in suitable localities from the northern boundary to and including the Malay States.

HIRUNDAPUS GIGANTEUS GIGANTEUS (Temminck)

Cypselus giganteus Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 61, pl. 364, 1825 (Java).

Dr. W. L. Abbott took a fine male at Lay Song Hong, Trang, August 30, 1896. He gives the soft parts as: Iris blackish brown; bill black; feet leaden blue, claws horny brown, tips black.

This is apparently the first record of this bird for Siam.

The form ranges from Trang and possibly farther north in Peninsular Siam southward to Sumatra, Java, Borneo, the Natunas, and some of the Philippines (Palawan, Culion, Calamianes).

It can be distinguished from *H. g. indicus* by the absence of the white spot on the lores and by the darker throat.

HIRUNDAPUS GIGANTEUS INDICUS (Hume)

Chaetura indica Hume, Stray Feathers, vol. 1, p. 471, 1873 (Andamans and southern India).

One male, Tha Chang, March 16, 1927; one male, Khun Tan Mountains, 4,000 feet, November 21, 1928; four males, Chantabun, January 11, 1930.

There is a specimen of this form in the British Museum from Salanga, or Junkseylon, recorded by Hartert.[49] Robinson and Kloss[50] say that it occasionally straggles as far south as Selangor in the Peninsula; it is evidently rare or only a straggler. Dr. Smith notes that it is common on the highest ridges of the Khun Tan Mountains. Gyldenstolpe[51] took a female on the Mehlem, March 10; Deignan[52] reports it rather common on the highest ridges of Doi Sutep in winter, leaving in April; this would indicate that it is only a winter resident in Siam. Lowe [53] found it not rare in western Siam and took two females 40 miles east of Umpang.

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[45] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 145, 1923.

[46] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 163, 1931.

[47] Journ. Federated Malay States Mus., vol. 5, p. 146, 1915.

[48] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 325, 1926.

[49] Catalogue of the birds in the British Museum, vol. 16, p. 476, 1892.

[50] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 144, 1923.

[51] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 56, 1913.

[52] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 163, 1931.

It ranges from Assam and Burma, south to Manipur, the Andamans, northern and southeastern Siam into Cambodia, Cochinchina, and Laos; occasionally it straggles as far south as the Malay States.

RHAPIDURA LEUCOPYGIALIS (Blyth)

Acanthylis leucopygialis Blyth, Journ. Asiat. Soc. Bengal, vol. 18, p. 809, 1849 (Penang).

Dr. W. L. Abbott collected one male and two females in Trang (near base of Kao Nom Plu, March 11, 1897; Trang, March 12, 1897); one male, the Dindings, April 16, 1900. He gives the color of the soft parts as: Iris dark brown; bill black; feet bluish fleshy.

This is a small, glossy, purplish-black swift; rump grayish with black shaft lines; upper tail coverts long and reaching beyond base of spines; the latter comparatively long and very fine.

One of the females, taken by Dr. Abbott in Trang, March 12, had almost mature eggs.

This species ranges from southern Tenasserim south through Peninsular Siam to the Malay States, Sumatra, Banka, and Borneo. De Schauensee [54] secured a male at Nakon Sritamarat, June 6; Robinson and Kloss [55] say that it is probably common in southwestern and Peninsular Siam but hard to obtain.

COLLOCALIA FRANCICA GERMANI Oustalet

Collocalia germani Oustalet, Bull. Soc. Philom. Paris, 1876, p. 1 (Condore Island).

One female, Singora, June 29, 1929; one male and three females, Koh Pangan, July 24–27, 1931.

Dr. W. L. Abbott collected four males and seven females in Trang (Prahmon, February 24, 1896; Tyching, April 18 and July 25, 1896; Trang, September 4, 5, 1896, February 10 and 12, 1897, and December 27, 1898). He gives the soft parts as: Iris blackish brown; bill black; feet dark brownish flesh, becoming black on toes and claws.

Gyldenstolpe [56] records it from Koh Lak; Robinson, under the name *C. merguiensis*, from Koh Samui and Koh Pennan (Pangan) [57] and from Pulo Lontar.[58]

The range of this form extends from the Mergui Archipelago to southwestern Siam, Peninsular Siam, Indo-China, and the Philippines.

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[53] Ibis, 1933, p. 481.

[54] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 266, 1934.

[55] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 144, 1923.

[56] Kungl. Svenska Vet-Akad. Handl., vol. 56, no. 2, p. 106, 1916.

[57] Journ. Federated Malay States Mus., vol. 5, p. 146, 1915.

[58] Journ. Federated Malay States Mus., vol. 7, p. 154, 1917.

COLLOCALIA FRANCICA INEXPECTATA Hume

Collocalia inexpectata Hume, Stray Feathers, vol. 1, p. 206, 1873 (Button Island, Andamans).

Dr. W. L. Abbott collected two males on Pulo Tioman, October 12, 1900, and two males at Tanjong Silantei, east coast of Johore, July 26, 1901.

This form occurs on the Nicobars, south Andamans, and in the southern Malay States; once accidental in Tenasserim.

The race is larger and has a darker rump than *C. f. germani.*

COLLOCALIA LOWI ROBINSONI Stresemann

Collocalia lowi robinsoni Stresemann, Bull. Raffles Mus., no. 6, p. 98, 1931 (Pulo Belitung, Southwest of Terutau Island, west coast Malay Peninsula).

One female, Sichol, Bandon, May 17, 1930.

This specimen does not exactly agree with the original description. It does not have the bill larger or the feet stronger than in the single female of *C. innominata* with which it has been compared. It differs from that species, however, as follows: While the rump is lighter than the back, it is darker, with the shaft lines less conspicuous than in *innominata;* the shaft lines below less conspicuous and practically none at all on the chest and throat; wing externally purplish black instead of bluish black; inner margins of the remiges lighter; tarsi more heavily feathered; wing longer, 135 mm. Outer tail feather, 56 mm; middle, 45 mm. This specimen may not belong here at all, but to an undescribed form. If the specimen has been correctly determined, then the range will be the Malay States northward through Peninsular Siam to Bandon.

Robinson [59] recorded it originally as *Collocalia innominata* and states that it was found nesting in some numbers at the type locality in December.

COLLOCALIA INNOMINATA Hume

Collocalia innominata Hume, Stray Feathers, vol. 1, p. 294, 1873 (Port Monat, Andaman Islands).

Dr. W. L. Abbott collected a single female at Lay Song Hong, Trang, September 5, 1896. He gives the soft parts as: Iris blackish brown; tarsus brownish flesh, claws black; bill black. Wing, 124 mm. The tail is worn and cannot be measured accurately.

Originally described from the Andamans, it has since been found to occur from southern Tenasserim through Peninsular Siam to the Malay States and (?) Sumatra.

Deignan [60] took a pair on Doi Angka, 4,000 feet, April 20, 1931; this is so far north of the known range that I believe the specimens should be carefully reexamined. De Schauensee [61] reports it from Chiengdao, 4,600 feet, January 16.

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[59] Journ. Federated Malay States Mus., vol. 7, p. 154, 1917.

[60] Rodgers and Deignan, Proc. Biol. Soc. Washington, vol. 47, p. 92, 1934.

[61] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 266, 1934.

This species is much like *Collocalia lowi robinsoni*, but if the above specimen has been identified correctly it differs in having a shorter wing, the rump paler with blackish shaft lines, and the wings more bluish black; the lower parts have the shaft lines more conspicuous. Both have feathered tarsi.

COLLOCALIA LINCHI ELACHYPTERA Oberholser

Collocalia linchi elachyptera OBERHOLSER, Proc. Acad. Nat. Sci. Philadelphia, vol. 58, p. 207, 1906 (Bentinck Island, Mergui Archipelago).

Dr. W. L. Abbott took the type series of this race, consisting of three males and two females, on Bentinck Island, Mergui Archipelago, March 9 and 10, 1900.

This is a small race, wing 94–100 mm.

Baker [62] places the Malay States specimens with this race, but the only two I have seen from there (Pahang and Singapore) are large birds, with wings measuring 111–112 mm.

C. l. elachyptera probably extends to the mainland of Tenasserim and Peninsular Siam.

KEY TO SIAMESE COLLOCALIA

a^1. Size very large; wing, 157–162 mm.................................**gigas**
a^2. Size considerably smaller; wing less than 140 mm.
  b^1. Tarsus feathered.
    c^1. Size larger, rump paler, tarsi densely feathered; wing, 124–135 mm.
      d^1. Size smaller; wing, 124–134 mm; chest with distinctly darker shaft lines; rump paler, with darker shaft lines...**innominata**
      d^2. Size larger; wing, 135 mm or more; chest without distinctly darker shaft lines; rump darker.............**lowi robinsoni**
    c^2. Size smaller; wing, about 112 mm; tarsi only slightly feathered; rump only slightly paler than back......**vestita amechana**
  b^2. Tarsus naked.
    c^1. Belly concolor with breast; size larger; wing, 114–120 mm.
      d^1. Lighter above; rump lighter......................**francica germani**
      d^2. Darker above; rump darker..................**francica inexpectata**
    c^2. Belly white; size smaller; wing, 111 mm or less.
      d^1. Size larger; wing, 103–111 mm..................**linchi cyanoptila**
      d^2. Size smaller; wing, 94–100 mm..................**linchi elachyptera**

Family TROGONIDAE: Trogons

HARPACTES ERYTHROCEPHALUS ERYTHROCEPHALUS (Gould)

Trogon erythrocephalus GOULD, Proc. Zool. Soc. London, 1834, p. 25 (Rangoon, Burma).

One male, Doi Angka, 4,000 feet, December 4, 1928; one male, summit of Doi Sutep, December 15, 1928; one male and one female, Khun Tan Mountains, 3,000 feet, November 20, 1928, and May 10,

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[62] The fauna of British India, Birds, ed. 2, vol. 4, p. 353, 1927.

1933; four males and one female, Khun Tan, 3,000 feet, October 18 and 21, 1929, August 28, 1930, February 20–22, 1932; one female, Kao Pae Pan Nam (west of Lomkao), February 18, 1934; one male and two females, Doi Hua Mot, August 23–September 1, 1934.

This form ranges from Nepal to eastern Assam, the whole of Burma to Tenasserim and northern Siam. In the mountains of the Malay States a smaller darker race is found. In Siam it has been found as far south as the Raheng District, according to Barton [63].

De Schauensee [64] took a good series at Chiengmai and Chiengdao and makes some interesting technical remarks on the relationship of several of the forms to which I quite agree.

HARPACTES ERYTHROCEPHALUS KLOSSI (Robinson)

Pyrotrogon erythrocephalus klossi Robinson, Ibis, 1915, p. 735 (Koh Chang, southeastern Siam).

Two males and two females, Koh Chang, January 5, 1925, January 9–11, 1926; one male and one female, Kao Kuap, Krat, December 24 and 26, 1929; one male, Kao Lem, December 27, 1930; one male and two females, Kao Sabap, October 28–November 26, 1933.

The male from Kao Lem differs from the remainder of the series in having the throat and chest darker red, the white bars on the wing coverts are wider, and the back darker brown. I am placing it with *klossi* for the present, however.

This is a smaller form than the northern Siamese race of this species, and the white bars on the wing coverts are narrower. From the small form inhabiting the Malay States (*chaseni*) it differs in being not so dark above and in being brighter red below, especially on the throat and chest.

H. e. klossi ranges from southeastern Siam into Cambodia. Very little is known of its distribution.

There are several other described races of *H. erythrocephalus*, including the following:

- *Harpactes erythrocephalus yamakanensis* Rickett (Fukien and Kwangtung Provinces, China).
- *Harpactes erythrocephalus rosa* (Stresemann) (Kwangsi, China).
- *Harpactes erythrocephalus hainanus* Grant (Hainan).
- *Harpactes erythrocephalus intermedius* Kinnear (Tonkin, North Annam, and Laos).
- *Harpactes erythrocephalus annamensis* (Robinson and Kloss) (southern Annam, southern Laos, and Cochinchina).
- *Harpactes erythrocephalus flagrans* (Müller) (Sumatra and ? Borneo).
- *Harpactes erythrocephalus chaseni* Riley (mountains of the Malay States).

As the species is a mountain-inhabiting one and apparently does not occur in the lowlands, the various forms are more or less isolated.

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[63] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 107, 1914.

[64] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 264, 1934.

HARPACTES DIARDII NEGLECTUS (Forbes and Robinson)

Pyrotrogon neglectus Forbes and Robinson, Bull. Liverpool Mus., vol. 2, no. 1, p. 34, 1899 (Malacca, Pahang).

One female, Kao Luang, 2,000 feet, Nakon Sritamarat, July 22, 1898; one female, Sichol, Bandon, May 15, 1930; one male, Kao Soi Dao, Trang, December 29, 1933.

Dr. W. L. Abbott collected two males and two females in Trang (Lay Song Hong, September 2 and December 22, 1896; Kao Soi Dao, 1,500 feet, February 14, 1899; Kok Sai, 500 feet, December 1898); one male, Tanjong Dungun, Trengganu, September 22, 1900; one adult male, one immature male, and one female, east coast of Johore (Endau River, July 9 and 19, 1901; Sembrong River, July 4, 1901); one male, Province of Wellesley, Straits Settlements (purchased in Penang). He describes the soft parts as: Male—bill blue, black at the tip and along culmen; orbital skin lilac; iris dark red; feet leaden; in the female, the iris is dark brown.

In this form the male has the head, throat, and foreneck black; a pink band across the nape; the tips of the outer tail feathers white, stippled with black; breast and belly scarlet; back ochraceous-tawny; middle tail feathers russet. In the female the head, throat, and foreneck are like the back or only slightly darker. In either sex the form can be distinguished from the other trogons inhabiting the Malay Peninsula by the white, stippled with black, tips to the outer tail feathers.

Two adult males from Banka and two adult males from Sumatra in the United States National Museum have the whole pileum washed with deep red, while in the five adult males from the Malay States listed above this wash is faint and confined to the nape. One of the males from Banka (no. 180457) is almost, if not quite, as strongly marked with red on the pileum as Bornean specimens. On the whole, the Banka–Sumatran series seems to be lighter on the back than the series from the Malay States. I believe the mainland bird should be treated as a separate form from the one occurring in Sumatra. Blasius[65] described *Harpactes diardii sumatranus* from Sumatra and the Malay Peninsula. I definitely designate the type locality as Sumatra. This will bring Forbes and Robinson's name into use again for the mainland form.

Harpactes diardii neglectus ranges from the Federated Malay States northward through Peninsular Siam to Bandon and possibly a little farther north.

Harpactes diardii diardii (Temminck) is confined to Borneo and Banka, and *Harpactes diardii sumatranus* Blasius inhabits Sumatra.

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[65] Mitt Geogr. Ges. Nat. Mus. Lübeck, ii Reiche, vol. 10, p. 95, 1896.

HARPACTES KASUMBA KASUMBA (Raffles)

Trogon kasumba RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 282, 1822 (Sumatra).

Dr. W. L. Abbott collected an adult male at the Rumpin River, Pahang, June 14, 1902.

No specimens from Sumatra are available for comparison, but three adult males from Borneo average darker on the back, with the white on the outer tail feathers less extensive.

Trogon temminkii Gould [66] is founded on *Trogon fasciatus* Temminck [67] and as the latter was evidently founded upon a Sumatra specimen, it becomes a pure synonym of Raffles's name.

The range of *Harpactes kasumba kasumba* is Sumatra and the southern end of the Malay Peninsula, where it has been taken as far north as Bangnara, Patani.[68]

The form resembles *Harpactes diardii neglectus* but may be distinguished by the scarlet instead of pink nape band and the pure white tips to the outer tail feathers without any black stippling.

The Bornean form has been separated by Chasen and Kloss [69] as *Pyrotrogon kasumba impavidus*.

HARPACTES ORRHOPHAEUS ORRHOPHAEUS (Cabanis and Heine)

Pyrotrogon orrhophaeus CABANIS and HEINE, Museum Heineanum, Theil 4, Heft 1, p. 156, 1863 (Malacca).

One female, Tha Lo, Bandon, September 23, 1931.

If this specimen does not belong to this species, I do not know where to place it. It is not quite adult. It resembles the same sex of *Harpactes duvaucelii* very closely but differs from a female of that species of about the same age as follows: The breast and belly are ochraceous-tawny, becoming yellow-ocher on the middle of the abdomen and under tail coverts instead of light coral-red; the middle tail feathers are without black tips; the buff bars on the wing coverts are wider and farther apart; the back is somewhat darker; there are no coral-red tips to the tail coverts; a few red feathers are coming in on the ear coverts. Wing, 100; tail, 122 mm.

The species is evidently rare, and not much is known concerning it. Müller [70] secured it near Puket; farther south in the Malay States it has been collected oftener, probably because this part of the Peninsula is better known. It ranges from the Federated Malay States north through Peninsular Siam to Bandon.

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[66] Proc. Zool. Soc. London, 1835, p. 29.

[67] Nouveau recueil de planches coloriées d'olseaux, livr. 54, pl. 321, 1825.

[68] Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 5, p. 146, 1923.

[69] Bull. Raffles Mus., No. 5, p. 84, 1931.

[70] Die Ornis der Insel Salanga, p. 60, 1882.

HARPACTES DUVAUCELII (Temminck)

Trogon duvaucelii TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 49, pl. 29, 1824 (Sumatra).

Two males and one female, Bangnara, Patani, July 6, 1926; one male, Kao Luang, Nakon Sritamarat, July 17, 1928; one female, Sichol, Bandon, May 23, 1930; one male, Kao Chong, Trang, September 2, 1933; one female, Kao Soi Dao, Trang, January 22, 1934.

Dr. W. L. Abbott collected one immature male, Kao Nom Plu, Trang, February 25, 1897, and purchased a male in Penang said to have come from the Province of Wellesley. He notes the color of the soft parts as: Iris dark brown; upper eyelid blue; bill blue, black along the culmen and at the tip; feet blue. The specimen is not fully adult, however, and some of these colors may change at maturity.

There seem to be no constant differences in color between specimens from the Malay Peninsula, Sumatra, Banka, and Borneo. Sumatran birds are somewhat larger than mainland specimens, but the series from the former is small. A good series from Borneo is very close to the mainland bird in size.

Wings of seven males from the Malay Peninsula measure 99–103 (101). Two males from Sumatra and two males from Banka, 103.5–109 (106.5). Eight males from Borneo, 94.5–102.5 (99.9) The species ranges from Borneo, Banka, and Sumatra to the Malay States and northward through Peninsular Siam to southern Tenasserim. Robinson and Kloss[71] report it from as far north as Tasan, Chumporn, in Peninsular Siam. De Schauensee[72] collected two males and three females from Nakon Sritamarat; he compared them with specimens from Sumatra, Borneo, and Johore and states that the Sritamarat specimens are more scarlet below.

HARPACTES ORESKIOS UNIFORMIS (Robinson)

Pyrotrogon oreskios uniformis ROBINSON, Journ. Federated Malay States Mus., vol. 7, p. 149, 1917 (Lamra, Trang, Peninsular Siam).

One female, Chiengdao, January 29, 1932; one female, Khun Tan, 4,000 feet, February 26, 1932; one male, Aranya, July 19, 1930; one male, Muek Lek, April 16, 1933; two males and one female, Pak Chong, May 10, 1925, April 27, 1926, November 26, 1929; one male, Tha Chang, Pak Chong, March 22, 1927; one male, Nong Khor, Sriracha, February 11, 1927; one female, Huey Yang, Sriracha, August 1, 1932; one male (marked female), Sakeo, near Krabin, May 3, 1928; three males, Sikeu, near Korat, February 21–March 1, 1926; one female, Kao Seming, Krat, October 11, 1928; one female, Kao Sabap, November 1, 1933; one female, Kao Luang, 2,000 feet, Nakon Sritamarat, July 21, 1928; one male and one female, Kao Soi Dao, Trang, January 7 and 22, 1934; one male, without label.

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[71] Journ. Nat. Hist. Soc. Siam., vol. 5, p. 148, 1923.

[72] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 265, 1934.

A set of two eggs was taken at Sikeu, March 1, with the male parent. They are oval, cartridge buff, and quite glossy. They measure 24.4 by 21 and 24.7 by 20.3 mm.

Dr. W. L. Abbott collected the following: Two males and two females, Trang (Prahmon, April 10, 1896; Lay Song Hong, September 15, 1896, and January 1, 1897; Trang, January 29, 1897); one male, Pulo Langkawi, December 8, 1899; one male, Pulo Terutau, November 14, 1903; two females, Tenasserim (Victoria Point, December 17, 1900; Sungei Balik, February 25, 1904). He gives the color of the soft parts as: Bill horn blue, tip and culmen black; feet leaden; orbital skin blue; iris dark brown.

The males from northern and eastern Siam differ as follows from the four males from Peninsular Siam: The pileum, throat, and chest are more of a light cadmium, not so dusky; the back is a lighter brown; and the tail is longer.

Robinson and Kloss [73] state that birds from the southern Malay Peninsula differ very slightly from those from farther north in having the bars on the secondaries and wing coverts rather closer together. No specimens from the Malay States have been available for examination, but three males and one female from the Island of Nias, off western Sumatra, agree quite closely with Peninsular Siamese birds.

Three males from Nias measure: Wing, 119–121 (119.7); tail, 137–144 (140.7); culmen, 16–17 (16.7) mm. Four males from Peninsular Siam: Wing, 115–125 (120.7); tail, 136.5–156 (147.9); culmen, 15.5–17 (16.2) mm. Ten males from eastern Siam: Wing, 114–122.5 (118.5); tail, 154–174 (163.8); culmen, 15–16 (15.4) mm.

The form ranges from Nias, Sumatra, and the Malay States northward through Peninsular Siam to Tenasserim and northern Siam, and eastward through eastern Siam to Laos, Cambodia, Cochinchina, and Annam. The eastern bird should probably be separated from the one occurring in Peninsular Siam, but I do not wish to do so at present. The form is generally distributed/all over Siam proper, Peninsular Siam, and many of the islands off the coast.

Gyldenstolpe [74] took a set of two eggs near Pak Koh on March 11, 1914. He describes the eggs as café-au-lait in color and gives the measurements as 23.7 by 20.5 and 23.2 by 20.5 mm. He also says that this trogon is generally distributed over the whole of northern Siam. Gairdner [75] records it from the Petchaburi District, and Barton [76] from the Raheng District.

Harpactes oreskios oreskios (Temminck) is confined to Java and *Harpactes oreskios dulitensis* Grant to Borneo.

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[73] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 148, 1923.

[74] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 105, 1916.

[75] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 150, 1915.

[76] Ibid., p. 107.

Family ALCEDINIDAE: Kingfishers

CERYLE RUDIS LEUCOMELANURA Reichenbach

Ceryle leucomelanura Reichenbach, Handbuch der speciellen Ornithologie, Alcedineae, pp. iv, 21, pl. 409B, fig. 3488, 1851 (Ceylon).

Three males, Potaram, February 4, 1926; eight males and three females, Bung Borapet, June 19–29, 1932, March 22, 1933; two males and one female, Bangkok, February 9 and July 5, 1924, and June 3, 1926.

This race ranges from Ceylon and the whole of India, east to Burma, Siam, and Indo-China, and south to Tenasserim.

It is evidently not an uncommon resident form all over Siam proper, but apparently does not extend south to Peninsular Siam.

Gairdner [77] records it for the Petchaburi District, and this is the most southern record I have seen in this direction; de Schauensee [78] took it at Kengkoi, which is the farthest east of which I have any records, although it is said to occur all over Indo-China. Herbert [79] found it breeding higher up the river than Bangkok from December 28 to March.

A closely related form, *Ceryle rudis insignis* Hartert, is found in southeastern China.

MEGACERYLE LUGUBRIS GUTTULATA (Stejneger)

Ceryle guttulata Stejneger, Proc. U. S. Nat. Mus., vol. 15, p. 294, 1893 (new name for *Alcedo guttata* Vigors, 1831, not Boddaert, 1783; Himalayas).

One male, Ta Fang, January 18, 1933; one male, Khonka Valley, January 19, 1933.

Dr. Smith supplies the following note on the first specimen: Rare; small watercourses in deep jungle. Stomach contained only fish bones.

Chasen and Kloss [80] record two males from the Raheng District; one of these specimens is now in the United States National Museum and was taken June 30. This seems to be the only previous record for Siam.

The race breeds from Kashmir to Assam, Burma, western and northern Siam, China, and south to Tonkin, Laos, and Annam. It is a mountain bird and does not occur in the low country, except possibly in winter.

M. l. lugubris (Temminck) is a considerably lighter-colored race, with reduced spotting on the pectoral band, and is confined to some of the Japanese islands and Korea.

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[77] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 150, 1915.

[78] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 261, 1934.

[79] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 307, 1924.

[80] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 165, 1928.

ALCEDO ATTHIS BENGALENSIS Gmelin

Alcedo bengalensis GMELIN, Systema naturae, vol. 1, pt. 1, p. 450, 1788 (Bengal).

One male, Sam Roi Yot, November 9, 1932; four males and two females, Bung Borapet, March 22, 1933; one male, Potaram, January 23, 1927; two males and five females, Bangkok, October 13, 1923; January 19, 1924, October 26–28, November 2, and December 28, 1925, and September 23, 1930; one female, Lem Sing, March 15, 1930; one female, Nong Khor, near Sriracha, September 27, 1925; one male, Kao Seming, Krat, October 12, 1928; one unsexed, Koh Chang, January 13, 1926; one male, Petchabun, February 14, 1934; one female, Koh Tao, off Bandon, September 19, 1928; five males, five females, and one unsexed, Nakon Sritamarat, September 16–October 8, 1926.

Dr. W. L. Abbott collected the following: One male, four females, and one unsexed, Trang (Prahmon, March 8–19, 1896; Lay Song Hong, September 28, 1896; Trang, January 1, 1899); one female, Pulo Lada, Langkawi Group, November 30, 1899; one male and two females, Tanjong Kalong, Singapore, October 29, 1899, March 2, 1900 (these three specimens taken by C. Boden Kloss); one female, Tanjong Dungun, Trengganu, September 20, 1900; one male and two females, Tenasserim (Maliwun, March 18, 1900; Victoria Point, March 30, 31, 1900); and one female, Loughborough Island, Mergui Archipelago, January 25, 1900.

Dr. Abbott gives the soft parts of the male as: Iris dark brown; bill black; feet red; claws horny brown; the female differs in having the lower mandible red or orange.

This form has an immense range extending from India east to Assam, Burma, China, Korea, and Japan, south to Indo-China, Siam, Peninsular Siam, the Malay States, Sumatra, Java, Borneo, and the Philippines.

The form is a common resident bird, in suitable localities, all over Siam and on the islands off the coast. In the northern part of its range it is migratory or partially so.

Alcedo atthis pallasii Reichenbach, a somewhat larger and paler form, breeds in Kashmir and Turkestan and extends westward to Transcaspia. It moves south of its breeding range in winter apparently but has not been taken east of the northwest provinces of India.

ALCEDO MENINTING MENINTING Horsfield

Alcedo meninting HORSFIELD, Trans. Linn. Soc. London, vol. 13, p. 172, 1821 (Java).

One male, Nakon Sritamarat, October 1, 1926; one female, Sichol, Bandon, May 19, 1930.

Dr. W. L. Abbott collected a pair at Chong, Trang, January 23–24, 1897, and an unsexed specimen on Singapore Island, May 27, 1899. He describes the soft parts of the male as: Iris dark brown; bill black, reddish at gape; feet red, claws horn brown. The female is described as: Bill red, blackish above.

The specimens of this species available to me for comparison are not sufficient to discuss the various races that have been proposed. Leaving out of consideration the forms described from the islands off the west coast of Sumatra, and considering only the Greater Sunda Islands, the Phillippines, and Siam, I have concluded that for the present it is inadvisable to recognize more than one form for specimens from Borneo, Java, Sumatra, and the mainland as far north in Peninsular Siam as Nakon Sritamarat and Bandon at least, and possibly farther. Five males from Sumatra, four males from Borneo, two males from Peninsular Siam, and two from Tawi Tawi, Philippines, agree in having the head banded with blue and the wing coverts spotted with the same color; below, allowing for individual variation, they show no differences. There are not so many specimens of the female. There are three from Sumatra, one from Borneo, two from Java, two from Peninsular Siam, one from Singapore, and two from Tawi Tawi, Philippines. These again, allowing for individual variation, show no constant differences. There are some differences in measurements, but this is likely due to the smallness of the series rather than to geographic variation.

Five males from Sumatra measure: Wing, 60–63 (61.8); tail, 23.5–28.5 (26.2); culmen, 36.5–41 (39.6) mm. Three males from Borneo: Wing, 60–62.5 (61.2); tail, 24.5–27 (25.5); culmen, 39–41 (39.8) mm. Two males from Peninsular Siam: Wing, 65–65.5; tail, 26.5–27.5; culmen, 41–42 mm. Two males from Tawi Tawi, Philippines: Wing, 62, 67; tail, 25, 28.5; culmen, 40, 40.

Four females from Sumatra measure: Wing, 59–66 (62.4); tail, 24.5–28 (26); culmen, 34–38 (36.7) mm. One female from Borneo: Wing, 61; tail, 27; culmen, 40.5 mm. Two females from Java: Wing, 65–66; tail, 26–29; culmen, 39.5–40.5 mm. Two females from Peninsular Siam: Wing, 64.5–66.5; tail, 26.5–28; culmen, 36–38 mm. Two females from Tawi Tawi, Philippines: Wing, 64–68; tail, 26–26.5; culmen, 36.5–37.5 mm.

Stuart Baker[81] splits the range of what he regards as *Alcedo meninting meninting* with his *Alcedo meninting scintillans*. He says that the bars of the forehead and crown are tinged with green in the latter. In the series before me the specimens that correspond to this definition are all females and came from: Sichol, Bandon; Chong, Trang; Singapore Island; Great Karimon Island, East Sumatra; and Tawi Tawi, Philippines; one specimen in each case. Some of these occur in the same locality as the *meninting* type of plumage, and Baker[82] mentions that *meninting* and *scintillans* both occur together. Taking the above facts into consideration, I have been forced to the conclusion that the latter is only an aberration or an age character and has no geographic significance. In other words, *A. m. scintillans* should be considered as a synonym of *A. m. meninting*.

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[81] The fauna of British India, Birds, ed. 2, vol. 4, pp. 254–256, 1927.

[82] Bull. Brit. Orn. Club, vol. 39, p. 39, 1919.

The range of *A. m. meninting* as at present understood would therefore be as follows: Southern Tenasserim, south through Peninsular Siam to the Malay States, Sumatra, Java, Borneo, and some of the southern islands of the Philippines.

This form does not seem to be a common bird in Peninsular Siam. Ogilvie-Grant[83] records it from Biserat and Jalor, Patani; Robinson and Kloss[84] from Pulo Terutau; and later[85] from Junkseylon. Baker[86] lists it from Klong Wang Hip.

ALCEDO EURYZONIA NIGRICANS Blyth

Alcedo nigricans Blyth, Journ. Asiat. Soc. Bengal, vol. 16, p. 1180, 1847 (Malacca).

One male, Kao Luang, Nakon Sritamarat, September 21, 1928; one male, Sichol, Bandon, May 24, 1930.

Dr. W. L. Abbott took a male at Kao Soi Doi, 1,000 feet, Trang, February 17, 1899. He gives the color of the soft parts as: Iris dark brown; bill very dark brown, blackish above; feet red.

This form ranges from the Malay States to Peninsular Siam and Tenasserim. Robinson[87] records it from Chong Trang, and Kao Nawng, Bandon.[88] It seems to be a rare bird in Peninsular Siam and apparently has not been taken often in the Malay States. There are two females from Borneo in the United States National Museum, but there are none of this sex from the mainland. A male from Dutch East Borneo is considerably smaller than the three mainland males, and the neck patch is a richer, much deeper color, near tawny; cinnamon in the mainland specimens. No specimens from Java have been examined.

The male from Borneo measures: Wing, 79; culmen, 45 mm. The three males from Peninsular Siam measure: Wing, 83–91 (87); culmen, 48.5–50.5 (49.5) mm.

CEYX ERITHACUS ERITHACUS (Linnaeus)

Alcedo erithaca Linnaeus, Systema naturae, ed. 10, p. 115, 1758 (Bengal).

Alcedo tridactyla Pallas, Spicilegia zoologica . . ., vol. 7, pl. 2, fig. 1, p. 10, 1769 (India).

One male, Nong Khor, near Sriracha, September 30, 1925; one female, Koh Kut, May 23, 1929; one male, Nakon Sritamarat, September 16, 1926.

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[83] Fasciculi Malayenses, pt. 3, p. 111, 1905.

[84] Ibis, 1911, p. 32.

[85] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 95, 1919.

[86] Ibid., p. 433.

[87] Ibis, 1911. p. 83.

[88] Journ. Federated Malay States Mus., vol. 5, p. 91, 1915.

Dr. W. L. Abbott collected one male and two females, Domel Island, Mergui Archipelago, February 23, 25, 1900. He describes the soft parts as: Iris dark brown; bill and feet coral-red.

The form ranges from Ceylon and practically all India east to Assam, Burma, Siam, Indo-China, and Hainan and south through Peninsular Siam to the Aroa Island, Straits of Malacca, and Sumatra.

Robinson and Kloss [89] state that it occurs throughout the Malay Peninsula. Gyldenstolpe [90] says that it is generally distributed throughout Siam, though nowhere common. A related form, *Ceyx erithacus macrocarus* Oberholser, is found in the Nicobar and Andaman Islands.

CEYX RUFIDORSUS RUFIDORSUS Strickland

Ceyx rufidorsa Strickland, Proc. Zool. Soc. London, 1846, p. 99, 1847 (Malacca).

One male, Sichol, Bandon, August 29, 1929.

Dr. W. L. Abbott took a male on the Endau River, east coast of Johore, July 15, 1901.

Chasen and Kloss [91] in working over this species reached the conclusion that *dillwynni* Sharpe, *innominata* Salvadori, *sharpei* Salvadori, *euerythra* Sharpe, and *robusta* Parrot are synonyms of this form. As they had a large series, they are probably right. They give the range of *C. r. rufidorsus* as Malay Peninsula, Rhio-Lingga Islands, Banka, Billiton, Sumatra, Mentawi Islands, Batu Islands, Java, Bali, Kangean Islands, Anamba Islands, Natuna Islands, and Borneo. I have left out the Philippine Islands mentioned by them as specimens examined by me from some of the other islands of the group seem to be different. They have less of the phlox-purplish wash on the head and back.

Robinson [92] records this kingfisher under the name *Ceyx euerythra* from Ban Kok Klap, Bandon. Bandon seems to be its northern limit on the mainland.

RAMPHALCYON AMAUROPTERA (Pearson)

Halcyon amauroptera Pearson, Journ. Asiat. Soc. Bengal, vol. 10, p. 635, 1841 (Calcutta, India).

Dr. W. L. Abbott collected two males and one female at Prahmon, Trang, March 8, 17, 1896; one male, Pulo Adang, Butang Islands, December 14, 1899; two males, Maliwun, Tenasserim, March 18, 1900; one male, Sullivan Island, Mergui Archipelago, February 3, 1900. He describes the soft parts as: Iris dark brown; orbital skin orange or red; bill red, tip black; feet bright red, claws horny brown.

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[89] Ibis, 1911, p. 33.

[90] Ibis, 1920, p. 588.

[91] Bull. Raffles Mus., no. 4, pp. 21–24, 1930.

[92] Journ. Federated Malay States Mus., vol. 5, p. 92, 1915.

This species can readily be distinguished from the *capensis* forms occurring in Siam by the seal-brown back and wings and the ochraceous-orange pileum.

The species ranges from eastern Bengal to Assam and south through Tenasserim and western Peninsular Siam to the Langkawi group of islands. Robinson and Kloss [93] state that they are not aware that it has been met with on the east coast of the Peninsula; it is fairly common along the west coast but is never found far from salt water. Robinson [94] records it from Pulo Terutau and Pulo Dayang Bunting, Langkawi Group.

RAMPHALCYON CAPENSIS BURMANICA (Sharpe)

Pelargopsis burmanica SHARPE, Proc. Zool. Soc. London, 1870, p. 67 (Tonghoo, Burma).

One male and one female, Mekhan, February 7, 1932; three males and one female, Bung Borapet, June 22–24, 1932, March 22, 1933; one male, Bung Tabgrit, March 27, 1933; one female, Bangkok, April 17, 1924; one male, Pong, Udon, February 17, 1929; two males and one female, Lem Sing, March 12, 16, 1930, June 27, 1931; one male, Sikeu, near Korat, February 17, 1926; one female, Petchabun, February 14, 1934; one male, Lamton Lang, May 30, 1934; one male, Rajaguri, April 10, 1926; one male, Muang Kanburi, April 15, 1928; one male, Koh Lak, June 22, 1933.

This form is a considerably lighter blue on the mantle and wings and the head is a lighter brown (drab) than the next form (*malaccensis*); it is also somewhat larger. Ten males from Siam proper measure: Wing, 146.5–159 (151.5); tail, 92.5–105 (97.7); culmen, 77–90 (84) mm. Five females: Wing, 146–164.5 (156); tail, 84–104 (97.7); culmen, 81–86 (84) mm.

The race ranges from Burma south to Siam and east to Cambodia, Laos, Cochinchina, and Annam. In Siam proper it is found resident all over the country and southward in the southwestern part as far as Koh Lak at least.

Robinson and Kloss [95] record it from Hat Sanuk, near Koh Lak; Namchuk, Pakchan, and Kandhuli Chaiya; the two latter localities are in Peninsular Siam, and the last is at about the southern limit of its range in this direction.

Specimens from Bandon are more or less intermediate between *burmanica* and *malaccensis*, but nearer the latter.

Herbert [96] states that in central Siam it is resident in the fruit gardens, where it breeds in hollow trees; four nests were found on the following dates: May 12, May 26, July 28, and August 31, only one of which contained a completed set of four eggs.

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[93] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 122, 1923.

[94] Journ. Federated Malay States Mus., vol. 7, p. 146, 1917.

[95] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 122, 1923.

[96] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 308, 1924.

RAMPHALCYON CAPENSIS MALACCENSIS (Sharpe)

Pelargopsis malaccensis SHARPE, Proc. Zool. Soc. London, 1870, p. 67 (Malacca)·
Ramphalcyon capensis hydrophila OBERHOLSER, Proc. U. S. Nat. Mus., vol. 35, p. 677, 1909 (Singapore Island).

One male and one female, Bangnara, Patani, May 30, 1924, July 11, 1926; one male, Bukit, Patani, January 27, 1931; one male, Yala, Patani, February 1, 1931; one male and four females, Nakon Sritamarat, September 16–October 8, 1926; one unsexed, Ban Tha Yai, Nakon Sritamarat, July 8, 1928; one female, Bandon, January 7, 1927; one male, Tha Lo, Bandon, September 14, 1931.

Dr. W. L. Abbott collected the following: Three males and three females, Tyching, Trang, May 10–July 6, 1896; one male, Packa, Trengganu, September 26, 1900; one male, Jambu Luang, east coast of Johore, August 2, 1901; one male, Singapore Island, May 27, 1899 (type of *hydrophila* Oberholser). He describes the soft parts as: Male, iris dark brown; bill dark red, tip black; feet bright red, claws black; orbital ring red; the female is similar.

The type of *Ramphalcyon capensis hydrophila* Oberholser has a lighter-colored pileum with a more buffy wash than the remainder of the above series. There is a male from Nakon Sritamarat (no. 308608) that has even a deeper, more ochraceous wash on the pileum than the type of *hydrophila;* these two specimens I prefer to consider aberrant. The males from Trengganu and Johore have dark pileums and are similar to those from Trang, or even a little darker. The pileum becomes lighter as the form extends north in the Peninsula, and there is a bluish wash in the Bandon male and in one male from Nakon Sritamarat. In the other male from the latter locality, as mentioned above, the pileum is washed with ochraceous. The male from Bandon, however, is darker on the pileum and back than *burmanica* from farther north.

The females of the genus are apparently somewhat larger than the males and have a tendency to be somewhat lighter on the pileum. Two females from the Rhio Archipelago (Lingga Island and Pulo Bintang), associated by Oberholser with the type of *hydrophila* in his description, have longer bills than any female measured from the mainland; they are somewhat immature and may or may not belong to the mainland race. As to their drab, ochraceous-washed pileums, they can be almost matched by a female from Nakon Sritamarat (no. 308611). For the present they can be placed with the mainland form with some reservations.

Ten males from Peninsular Siam (from Bandon south) and the Malay States measure: Wing, 139–153 (146.2); tail, 85.5–95 (91.7); culmen, 73–84 (77) mm. Eight females: Wing, 145–158 (151.5); tail, 91–99.5 (95.2); culmen, 75.5–83 (78) mm.

The range of the form extends from Bandon in Peninsular Siam, or possibly slightly farther north, south through the Malay States to Singapore. Robinson[97] reports it from Koh Pennan, off Bandon.

This form has a darker pileum and back than *R. c. burmanica.*

HALCYON SMYRNENSIS FUSCA (Boddaert)

Alcedo fusca BODDAERT, Table des planches enluminéez d'histoire naturelle, p. 54, 1783 (Malacca).

One female, Mesuya Valley, January 2, 1933; one female, Bung Borapet, June 21, 1932; one male, Potaram, February 6, 1926; two males and five females, Bangkok, October 2 and 25, 1924, October 10, 26, and December 18–30, 1925; one unsexed, Hupbon, October 31, 1931; one female, Nong Khor, February 5, 1927; one male, Kao Sabap, November 4, 1933; two males and one female, Muang Kanburi, April 7 and 9, 1928; one male and one female, Pran, April 1 and 4, 1931; one female, Bandon, January 6, 1927; one unsexed, Bangnara, Patani, July 11, 1926; one female, Bukit, Patani, January 24, 1931.

Dr. W. L. Abbott collected the following: Three males, two females, and one unsexed in Trang (Prahmon, April 4, 1896; Tyching, July 8, 1896; Lay Song Hong, August 16, and September 20, 1896; Trang, February 15, 1897, March 4, 1899). There is a female from Tanjong Kalong, Singapore, October 15, 1899, collected by C. Boden Kloss. Dr. Abbott also collected a set of two eggs in Trang, February 15, 1897.

Dr. Abbott gives the soft parts as: Iris dark brown; bill red, dark at base; feet red, claws dark horn brown.

There seem to be no constant differences in color between Peninsular Siam specimens and those from Siam proper; the males from the north on the average seem to have somewhat larger bills, but it is not constant.

The form ranges all over India and Burma east to Siam, southwest China, Indo-China, and Peninsular Siam to the Malay States as far as Singapore. Apparently it is a common resident form all over Siam and in the Malay Peninsula.

The species has been divided into a number of forms. That from Fokien, China, has been separated as *Halcyon smyrnensis fokiensis* Laubmann and Götz.[98]

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[97] Journ. Fed. Malay States Mus., vol. 5, p. 145, 1915.

[98] Verh. Orn. Ges. Bayern, vol. 17, p. 42, 1926.

HALCYON PILEATA (Boddaert)

Alcedo pileata Boddaert, Table des planches enluminéez d'histoire naturelle, p. 41, 1783 (China).

Five males and two females, Bangkok, February 6 and October 30, 1924, October 22 and 29, and December 29, 30, 1925, and January 19, 1927; one female, Nong Khor, February 12, 1927; one male, Lem Sing, March 15, 1930; one female, Koh Chang, January 5, 1926; one male, Rajaguri, April 10, 1926; one male and one female, Koh Tao, September 25, 26, 1928.

Dr. W. L. Abbott collected the following: Five males and two females in Trang (Prahmon, March 19 and 21, 1896; Lay Song Hong, October 9, 1896; Trang, January 13, 26, 1897; Kantany, January 16, 1897); one male, Pulo Adang, Butang Islands, December 15, 1899; one male and three females, Tenasserim (Tanjong Badak, January 6, 1900; Bok Pyin, February 19, 1900; Victoria Point, November 24, 1900; Maliwun Creek, December 20, 1901); two females, Mergui Archipelago (Loughborough Island, January 26, 1900; and Victoria Island, December 5, 1903). He gives the colors of the soft parts as: Iris dark brown; bill red, dusky at base; feet red, blackish in front and top of toes.

This species has a tremendous range, being found from Korea, in the north, south through China to Indo-China, Siam, Burma, and Assam, west to Nepal, thence south through Peninsular Siam to Celebes.

In the northern part of its range it is only a summer resident, but farther south it is said to be resident the year around. The resident birds in the southern part of its range are probably augmented in the cold season by the migrants from farther north. It seems to be a rather common bird in Siam proper and in Peninsular Siam also.

Herbert[99] took a single egg from a hole in a tree in the middle of July at Paknampo, central Siam.

It is said to be a seacoast bird, going inland only along the large rivers.

ENTOMOTHERA COROMANDA COROMANDA (Latham)

Alcedo coromanda Latham, Index ornithologicus, vol. 1, p. 252, 1790 (Coromandela; type locality fixed by Oberholser, Rangoon, Pegu).

One male and one female, Nakon Sritamarat, March 28, 1924; one male, Koh Kut, May 25, 1929.

Dr. Abbott secured a male at Tyching, Trang, April 24, 1896. He gives the soft parts as: Feet red, claws orange-yellow; orbital ring orange.

The form ranges from the Himalayas of Nepal east to Assam, Burma, southeastern China, Indo-China, Siam, and down Peninsular

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[99] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 309, 1924.

Siam to Malacca. Gyldenstolpe[1] has recorded it from Khun Tan; Robinson[2] from Pulo Langkawi and Pulo Terutau; Robinson and Kloss[3] state that it is widely, though sparingly, distributed along both coasts of Peninsular Siam and is very numerous both in Singora and at Tanjong Patani.

ENTOMOTHERA COROMANDA MINOR (Temminck and Schlegel)

Alcedo (*Halcyon*) *coromanda minor* Temminck and Schlegel, Fauna Japonica, Aves, p. 76 1842 (Borneo and Sumatra; type locality restricted by Oberholser, Pontianak, Borneo).

Dr. W. L. Abbott took an adult male on Singapore Island, May 18, 1899. He describes the soft parts as: Iris dark brown; eyelids red; bill and feet red, claws horny red.

This is a smaller and considerably darker bird than the preceding race. It ranges from Borneo and Java to Singapore and Johore; possibly farther north.

There are apparently no records of this form from Peninsular Siam, though it may reach Patani.

SAUROPATIS CHLORIS ARMSTRONGI (Sharpe)

Halcyon chloris subsp. a. *armstrongi* Sharpe, Catalogue of birds in the British Museum, vol. 17, p. 277, pl. 7, fig. 1, 1892 (Sunderbunds to Burmah, Tenasserim, and Siam, south to the Malayan Peninsula, Sumatra, and northern Borneo; type locality as fixed by Oberholser, Siam).

Two males, Bangkok, February 14 and April 13, 1924; one male and two females, Nakon Sritamarat, September 16–30, 1926; one male, Patalung, July 10, 1929; one female, Koh Pangan (Pennan), July 22, 1931.

Dr. W. L. Abbott collected the following: Two males and two females, Trang (Telibon Island, February 25 and March 1, 1896; Prahmon, March 22 and 26, 1896); one male and one female, Pulo Langkawi, December 2, 1899; one female, Tanjong Laboha, Trengganu, September 30, 1900; two males, Mergui Archipelago (Loughborough Island, January 24, 1900; Bentinck Island, March 9, 1900); one male, Victoria Point, Tenasserim, March 30, 1900. He gives the soft parts as: Iris dark brown; bill black, white at base of lower mandible; feet fleshy brown.

The two males from Bangkok have the ear coverts blue like the crown. An unsexed specimen from Klong Yai has the ear coverts more of a greenish blue; the latter can be matched by specimens from Peninsular Siam. Only two specimens, one from Pulo Langkawi and one from Trengganu, have the ear coverts blackish, and they show signs of being slightly immature, though in other immature specimens the ear coverts are greenish blue. If *Sauropatis chloris humii* Sharpe is to be recognized, it will have to be for a form inhabiting the Malay States and probably farther south.

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[1] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 116, 1916.

[2] Journ. Federated Malay States Mus., vol. 7, p. 147, 1917.

[3] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 128, 1923.

The range of *S. c. armstrongi* is from the southeastern coast of Bengal to Burma, the coast of Siam, southern Indo-China, and Peninsular Siam as far as Pulo Langkawi. It is a seacoast form and apparently is found all along the Siamese seacoast and on the islands off the coast.

Herbert[4] reports it common in the nesting season at Bangkok, which extends from March 10 to August.

CARIDAGRUS CONCRETUS CONCRETUS (Temminck)

Dacelo concreta TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 58, pl. 346, 1825 (Sumatra).

One male, Huey Yang, Kao Luang, October 6, 1930; one female, Kao Chong, Trang, September 6, 1933; one female, Kao Soi Dao, Trang, December 20, 1933. Dr. Smith gives the soft parts of the male as follows: Iris dark brown; bill blackish brown, below yellow; legs greenish yellow; the female is similar.

Dr. W. L. Abbott collected a female at the Endau River, east coast of Johore, June 27, 1901, and a female at the Rumpin River, Pahang, July 5, 1902. Dr. Abbott's description of the soft parts of the female is practically the same as that of Dr. Smith except the legs are given as brownish yellow or yellow.

The two females taken by Dr. Abbott were caught in rat traps in deep forest far from water.

Beside the above, the United States National Museum contains only two males and one female from Sumatra with definite localities. From the two Sumatra males, the single male from Kao Luang differs in being much larger and in having the coverts of the wing edged with lighter blue. The single male from Kao Luang measures: Wing, 116; culmen, 48 mm. The two Sumatra males: Wing, 104–107; culmen, 44.5–45 mm. Whether these differences would hold in a larger series is problematical.

Robinson and Kloss[5] state that Bornean specimens are darker blue.

This species seems to be rare in museums, probably on account of its habits.

It ranges from the extreme south of Tenasserim to Singapore, Sumatra, Banka, and Billiton. The Bornean form has been named *Halcyon concreta borneana* by Chasen and Kloss.[6]

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[4] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 310, 1924.

[5] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 130, 1923.

[6] Bull. Raffles Mus., no. 4, p. 24, 1930.

LACEDO PULCHELLA PULCHELLA (Horsfield)

Dacelo pulchella HORSFIELD, Trans. Linn. Soc. London, vol. 13, p. 175, 1821 (Java).

One male, Tha Lo, Bandon, September 24, 1931; one female, Huey Yang, Kao Luang, October 4, 1930; one female, Kao Chong, Trang, September 13, 1933; one male, Kao Soi Dao, Trang, January 4, 1934; one male and three females, Kao Sabap, November 13–25, 1933; one female, Lamton Lang, May 28, 1934.

Dr. W. L. Abbott secured a female at Tyching, Trang, July 3, 1896. He gives the color of the soft parts as: Feet brownish yellow, claws dark brown; bill red; orbital skin red.

The female in this species is somewhat larger than the male and differently colored.

I am inclined to agree with Robinson and Kloss [7] in not recognizing a northern form of this kingfisher. The species varies considerably individually, but my material is not sufficient to show geographic differences, if any exist. A male from eastern Sumatra is darker chestnut on the forehead and cheeks than Peninsular Siamese males, and the head is without any white markings on the crown, but whether these differences are geographic I cannot tell.

The species ranges from Pegu and Tenasserim to Siam and east to Cambodia, Laos, central and southern Annam, south through Peninsular Siam to the Malay States, Sumatra, Java, and the Natuna Islands.

Gyldenstolpe [8] records it from Pak Koh and Hue Pu, northern Siam; it has been recorded thence from practically all parts of the country and on some of the larger islands off the coast. It is said to be a bird of the dry jungle, and probably that is why it is not commonly collected. Herbert [9] records a set of three eggs taken by his collector at Meklong, May 26. De Schauensee [10] secured a small series at Chiengmai, 3,500 feet, Chantabun, and at Nakon Sritamarat, which he assigns to *Lacedo pulchella amabilis*.

Family MEROPIDAE: Bee-eaters

MEROPS ORIENTALIS BIRMANUS Neumann

Merops viridis birmanus NEUMANN, Orn. Monatsb., vol. 18, p. 80, 1910 (Myingan, Burma).

Two females, Chomtong, November 30, 1928; two males, Chiengdao, January 28, 1932; three males and two females, Sam Roi Yot, November 9–19, 1932; one male, Tha Luang, October 23, 1932; one female, Ban Kang, December 1, 1928; two males, Noan Wat, February

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[7] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 126, 1923.

[8] Kungl. Svenska Vet.-Akad Handl., vol. 56, no. 2, p. 115, 1916.

[9] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 311, 1924.

[10] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 262, 1934.

14, 1929; one immature male and three immature females, Chantabun, May 26–27, 1929; one male, Sriracha, April 19, 1934; two males and one female, Muang Kanburi, April 7–9, 1928; two males and one female, Bo Ploi, Kanburi, September 9, 1928; one male and one female, Koh Lak, June 6, 1933.

The four immature specimens collected at Chantabun are in two stages of plumage. All four are a warm buff below washed with light green in varying degrees, according to age; above they are a lighter, less bright green than the adult, with a buffy suffusion on the nape and upper back. In the first stage the black crescent on the chest is entirely lacking and the lowerparts are lighter, less green. In the next stage the black crescent appears on the chest; the lowerparts become a deeper green; the throat a citron yellow; the malar region bright green; above, the pileum becomes a deeper buff, with a deeper buff suffusion.

In some of the apparent adults the chin and sides of the throat become cendre blue, but the specimens with the bluest throats do not always have the deepest golden pileums. All the specimens with the bluest throats Dr. Smith has sexed as males, so it may be a sexual character. All the birds sexed as males have not the blue chins and throat, however; they are probably younger birds.

The present form has a rather wide range, extending from Assam, Burma, and Yunnan southward to Siam and eastward to Cambodia, Cochinchina, Annam, and Laos. It occurs nearly all over Siam proper and in the southwest has been taken as far south as Koh Lak where it has been collected by Count Gyldenstolpe and Robinson and Kloss.

Stuart Baker recognizes two additional forms for Asia and Sclater four forms for Africa. *Merops orientalis orientalis* Latham inhabits nearly all India and Ceylon, except the extreme northwest frontier

MEROPS PHILIPPINUS JAVANICUS Horsfield

Merops javanicus Horsfield, Trans. Linn. Soc. London, vol. 13, p. 171, 1821 (Java).

One male and one female, Bung Borapet, June 20, 1932, March 29, 1933; one male and one female, Bangkok, January 3 and September 30, 1924; one male and one female, Pran, April 1, 1931; one male and one female, Sam Roi Yot, November 8, 1932; one male and one female, Koh Tao, off Bandon, September 22, 1928.

Dr. W. L. Abbott collected the following: Three males and one female, Prahmon, Trang, February 24 and March 9, 1896; one male, Tanjong Kalong, Singapore, November 19, 1899; one male, Pulo Langkawi, December 8, 1899.

These birds agree with the form from Java rather than that from the Philippine Islands. Specimens from the Philippines have the breast washed with buffy and the back a golden-green, while specimens from Java and the mainland have the breast without the buffy wash, just a plain bright green and the back the same.

The form has a wide range, occurring from Ceylon and practically all India to the foothills of the Himalayas, eastward to Burma, Siam, Cambodia, Cochinchina, Annam, and Tonkin, and southward down Peninsular Siam to the Malay States, Sumatra, Java, and Celebes.

The form is both a resident and migrant virtually all over Siam and extends down Peninsular Siam to Singapore. Robinson[11] in recording it from Pulo Terutau says that it is a migrant only in the southern part of the Peninsula; he has also recorded it from Koh Samui and Koh Pennan.[12] Williamson[13] states that it is both resident and migrant at Bangkok.

Merops philippinus philippinus Linnaeus inhabits the Philippine Islands.

MEROPS VIRIDIS SUMATRANUS Raffles

Merops sumatranus RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 294, 1822 (Sumatra).

One male and one immature unsexed, Bangnara, Patani, May 9, 1924, July 17, 1926; one male and one female, Singora, June 29, 1929; two males, Koh Lak, June 5 and 11, 1933; one female, Nong Khor, Sriracha, October 3, 1925.

Dr. W. L. Abbott collected a male and a female in Trang (Prahmon, February 21, 1896; Tyching, July 8, 1896); two males and one female at the Dindings, Straits of Malacca, April 15 and 16, 1900; one male, one female, and one unsexed, Tanjong Kalong, Singapore, March 6 and April 20, 1900. He gives the soft parts as: Bill black; feet dull black; iris carmine.

This form has a wide range, occurring from Borneo, Sumatra, and Nias through the Malay States and Peninsular Siam to southern and southeastern Siam, Cochinchina, Annam, Tonkin, and southeastern China. Robinson and Kloss[14] report it common over nearly all the Peninsula and met with it on Langkawi. Robinson[15] records it from Koh Samui and Koh Pennan, off Bandon; Kloss[16] lists it from Lat Bua Kao, eastern Siam.

Bangs and Penard[17] described the form *Merops sumatranus coeligenus* from Java. Two specimens in the United States National Museum bear out their diagnosis of bluer underparts, etc., as compared with specimens from the mainland. Unfortunately, however,

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[11] Journ. Federated Malay States Mus., vol. 7, p. 152, 1917.

[12] Journ. Federated Malay States Mus., vol. 5, p. 146, 1915.

[13] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 328, 1917.

[14] Ibis, 1911, p. 37.

[15] Journ. Federated Malay States Mus., vol. 5, 1915, p. 146.

[16] Ibis, 1918, p. 93.

[17] Proc. New England Zool. Club, vol. 8, p. 43, 1923.

Hartert[18] has shown that *Merops viridis* Linnaeus applies to this species and was founded upon the Javan bird. As the mainland form is apparently recognizable, it will once again bring the name of *Merops sumatranus* Raffles into use for it.

I have not examined any birds from the island of Sumatra, but there are in the United States National Museum five specimens from Nias collected by Dr. Abbott. These are in fresh unworn plumage. They seem to be of a brighter green on the chest than the series from the Malay Peninsula and Siam. The collection of the United States National Museum contains also three specimens from Hunan, China, in fresh plumage, and since they apparently do not differ from those from Nias, the above apparent difference is probably due to age or wear.

Two specimens from Java (one male and one female) measure: Wing, 109–111; culmen, 35.5–36 mm. Twelve specimens from the Malay Peninsula and Siam (seven males and five females): Wing, 109–121 (113.4); culmen, 33.5–37.5 (35.4) mm. Three specimens from Hunan, China (one male, one female, and one unsexed): Wing, 111–118 (114); culmen, 36.5–38 (37) mm. Five specimens from the island of Nias (two males and three females): Wing, 113–118.5 (115.8); culmen, 33–38 (35) mm.

I have not examined any specimens from Borneo.

Apparently there are three recognizable forms of this species, as follows:

Merops viridis viridis Linnaeus (Java).
Merops viridis americanus Müller (Philippine Islands).
Merops viridis sumatranus Raffles (as above).

MELITTOPHAGUS ERYTHROCEPHALUS ERYTHROCEPHALUS (Gmelin)

Merops erythrocephalus Gmelin, Systema naturae, vol. 1, pt. 1, p. 463, 1788 (India).

One male and one female, Mesarieng, January 21, 1933; one female, Nong Bua, October 18, 1932; three males and four females, Hin Lap, December 10–12, 1931; one female, Nong Mong, Krabin, August 24, 1925; one male and one female, Nong Khor, Sriracha, November 10–14, 1926; one female, Ban Nakae, March 3, 1929; two males, and one female, Koh Chang, January 5–8, 1926; two males, Tha Lo, Bandon, September 24, 1931; one female, Yalo, Patani, February 2, 1931; two males, Kao Soi Dao, Trang, January 6 and 17, 1934.

Dr. W. L. Abbott collected two males and five females in Trang (Prahmon, February 21 and March 30, 1896; Telibon Island, February 25, 1896; Lay Song Hong, November 11, 1896; near Kao Nok Ram, January 18, 1899); one female and one unsexed, Tenasserim (Sungei Balik, November 28, 1900; Champang, December 21, 1903).

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[18] Nov. Zool., 1910, p. 483.

One of Dr. Abbott's specimens is an immature male (about two-thirds grown and taken at Prahmon, Trang, March 30. It is a smaller edition of the adult, but the colors are paler, the forehead is green, and the ear coverts black. This specimen would indicate that they must commence at this locality to breed very early.

Dr. Abbott describes the soft colors as follows: Bill black; feet dark fleshy brown or leaden; iris red.

The form ranges from the west coats of India and Ceylon eastward to Assam, Burma, Yunnan, Siam, Cambodia, Cochinchina, Annam, Tonkin, and Laos and southward through Peninsular Siam to the Malay States.

Robinson and Kloss [19] say that on Terutau and Langkawi Islands it is very abundant during the winter months and is found sparingly in Penang and extends south as far as Parit on the Perak River. The young bird taken by Dr. Abbott, mentioned above, would indicate that it must breed as far south as Trang, at least, and at a very early date. Deignan [20] reports that a few pairs breed on Doi Sutep at 5,500 feet in April and then disappear. De Schauensee [21] states that it appears to be rare in North Siam. It occurs nearly all over Siam in the breeding season, but just how far south it winters or how far south it breeds apparently is not known.

A related form, *M. e. leschenaulti* (Vieillot), is confined to Java. It lacks the brown band above the black band across the chest.

ALCEMEROPS ATHERTONI (Jardine and Selby)

Nyctiornis athertoni Jardine and Selby, Illustrations of ornithology, vol. 2, pl. 58, 1828 (Bangalore,[22] "India").

One male and one female, Doi Hua Mot, August 19, 22, 1934; one female, Doi Phra Chao, August 6, 1934; one female, Khun Tan Mountains, 4,400 feet, November 22, 1928; one male and two females, Khun Tan, 3,000 feet, October 23, 1929, February 16, 1932; one female, Sakeo, near Krabin, May 4, 1928; two females, Lamton Lang, May 30 and June 1, 1934; one male and one female, Lat Bua Kao, August 7, 1929; two females, Pak Chong, June 15, 1925; one female, Lam Klong Lang, Pak Chong, June 10, 1925; one female, Klong Yai, Sriracha, July 22, 1932; one male, Ban Tarn Dam, southeastern Siam, March 5, 1930; two males, Pran, southwestern Siam, May 27, 1928.

Several of the above specimens are heavily washed above with caerulean blue. They are in worn plumage, and I think this color is due to wear.

There are two immature specimens in the series: A male from Pran, May 27, and a female from Pak Chong, May 15; they are about two-thirds grown. They are like the adults but, of course, have much shorter bills. They evidently acquire the adult plumage at an earlier age than *Alcemerops amictus.*

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[19] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 138, 1923.

[20] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 161, 1931.

[21] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 261, 1934.

[22] Kinnear, Ibis, 1925, p. 751.

The species ranges from India eastward to eastern Assam and south into Burma, Siam, Laos, Tonkin, Annam, Cochinchina, and Cambodia. It occurs nearly all over Siam proper and has been taken as far south as Hat Sanuk by Robinson and Kloss [23] and Koh Lak Paa by Count Gyldenstolpe.[24] Deignan [25] reports that it is found on Doi Sutep between 2,500 and 4,600 feet and also on the plain at Chiengmai. De Schauensee [26] secured specimens from Chiengdao, 5,000 feet, as well as Doi Sutep, 4,500-5,550 feet, and Monglin, South Shan States, and reports it everywhere rather scarce. It is a forest bird.

A single male from Daban, southern Annam, received through C. Boden Kloss, is considerably paler above and below, and the gorget is less pronounced and a paler blue; the underside of the tail is noticeably paler and the tip of the feathers dusky rather than blackish; the shaft of the tail feathers is ivory instead of lemon-yellow.

ALCEMEROPS AMICTUS (Temminck)

Merops amicta TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 52, pl. 310, 1824 (Bencoolen, Sumatra).

One male and one female, Kao Luang, 1,000 feet, Nakon Sritamarat, July 23, 1928; one male, Tha Lo, Bandon, September 15, 1931; two males and one female, Kao Soi Dao, Trang, December 20, 27, 1933, January 25, 1934.

Dr. W. L. Abbott collected four males and one female in Trang (Prahmon, March 6, 1896; Tyching, July 21, 1896; Lay Song Hong, September 20, 1896; Kao Soi Dao, 1000–2000 feet, February 11–18, 1899); and one female, Champang, Tenasserim, December 22, 1903. He gives the soft parts as follows: Bill black, base of lower mandible leaden; feet greenish leaden; iris orange-red.

The species ranges from Tenasserim south through Peninsular Siam to the Malay States, Sumatra, Banka, and Borneo.

Besides the series mentioned above, the United States National Museum contains the following: One male from east Sumatra, one male and one female from Banka, three males and three females from Borneo (only two of each sex adult) and one male from Selangor.

The series from Borneo is not sufficient to show whether there is any average difference in size between it and the mainland series. There seems to be no constant difference in color.

In the series of males before me, a narrow border around the bill is caerulean blue in seven specimens, but with the mentum scheele green in nine and entirely green in one; the difference is probably due to age. All the males have the bases of the lilac feathers of the forehead scarlet or apricot buff subbasally. The females differ from the males in having the forehead scarlet like the throat and the lilac of the crown more restricted.

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[23] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 138, 1923.

[24] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 110, 1916.

[25] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, no. 3, p. 161, 1931.

[26] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 261, 1934.

A young female not long from the nest collected by Dr. Abbott on Banka, June 8, is lettuce green, with bluish feathers around the bill; belly empire yellow; under tail coverts the same, with a greenish wash; breast lightly washed with empire yellow; tail as in the adult. Another immature, sexed male of about adult size collected on the same island by Dr. Abbott, June 20, is similar but a deeper green; the abdomen washed with green and more of a green wash on the under tail coverts; a couple of red feathers still in sheath are appearing on the left side in the malar region. One or two feathers on the throat and one or two on the breast are tinged with golden. Evidently the red of the adult does not appear until the young reach adult size.

Gairdner's [27] record from the Petchaburi District is the northernmost record in Siam known to me. In Tenasserim it has been found farther north. Robinson and Kloss [28] say that farther south in Peninsular Siam it is a common forest bird.

Eight males from the Malay Peninsula measure: Wing, 125–141 (130.9); tail, 110.5–119 (115.2); culmen, 45–52 (46.7). Two males from Borneo: Wing, 129.5–135; tail, 114.5–117; culmen, 45–47 mm. Three females from the Malay Peninsula: Wing, 122–129 (126.5); tail, 112–118.5 (115.2); culmen, 47.5–49 (48.2) mm. Two females from Borneo: Wing, 119–120; tail, 112–114; culmen 46–47 mm.

Family CORACIIDAE: Rollers

CORACIAS AFFINIS McClelland

Coracias affinis McClelland, Proc. Zool. Soc. London, 1839, p. 164, 1840 (Assam).

One female, Ban Nam Kien, Nan, April 21, 1930; one female, Aranya, July 13, 1930; three males, three females, and one unsexed, Bangkok, March 7 and October 18, 1924, September 12, October 27, and December 26–29, 1925; one male, Pak Chong, June 25, 1934; two males, Muang Kanburi, April 15 and September 11, 1928; one male, Nong Khor, Sriracha, February 8, 1927; one female, Sakeo, near Krabin, May 6, 1928.

This species has a rather wide range, occurring from Assam and eastern Bengal through Burma and Yunnan to Siam, Cambodia, Cochinchina, Annam, Laos, and Tonkin. In Siam it has been taken nearly all over the country and extends down Peninsular Siam as far as Patani.

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[27] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 150, 1915.

[28] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 139, 1923.

Herbert [29] found it nesting in central Siam from March to April and describes the nest and eggs. In Peninsular Siam it is said to be only a migrant.

Parrot [30] separated the Siamese bird on the strength of a single unsexed specimen naming it *Coracias affinis theresiae.* Robinson and Kloss [31] state that the principal character of the race is not borne out by the considerable series examined by them.

I have not examined any birds from Assam, but I have before me two adult males and four females from Yunnan. There is not much difference in color between these and the series from Siam. The Yunnan bird has a more brownish-drab chest and breast; there is some difference in size, however, the more northern bird being larger. There is no difference in size or color between the sexes.

Two males and four females from Yunnan measure: Wing, 194.5–207 (199.5); culmen, 36.5–42 (40) mm. Six males and six females from Siam: Wing, 177–191 (185.2); culmen, 32.5–38 (34.9) mm.

This species has been placed as a race of *Coracias benghalensis* by many recent ornithologists, but in my opinion it is too distinct from that species to be so treated.

EURYSTOMUS ORIENTALIS ORIENTALIS (Linnaeus)

Coracias orientalis Linnaeus, Systema naturae, ed. 12, p. 159, 1766 (India orientali=Java).

One male, Hin Lap, eastern Siam, September 30, 1932; one male, Pang Sok, eastern Siam, August 26, 1926; one male, Pak Chong, May 9, 1925; one female, Lam Klong Lang, Pak Chong, June 16, 1925; one female, Tha Chang, Pak Chong, March 19, 1927; two females, Nong Khor, Sriracha, November 9, 1926, February 11, 1927; one male and one female, Ban Sadet, Sriracha, May 31 and June 2, 1925; one male, Huey Yang, Sriracha, July 31, 1932; one male, Sakeo, near Krabin, May 7, 1928; one male, Lamton Lang, May 30, 1934; one female, Kao Seming, Krat, October 15, 1928; one female, Lem Sing, March 16, 1930; one male, Sai Yok, Kanburi, September 22, 1929; one male, Pran, April 2, 1931; one male, Bandon, January 6, 1927; two females, Tha Lo, Bandon, January 13, 17, 1931; four males, Sichol, Bandon, June 25, 1929, May 20 and 23, 1930; three males and two females, Nakon Sritamarat, September 12, 13, 1924, September 26–October 6, 1926; one female, Ban Peng Sao, Nakon Sritamarat, no date; one male, and one female, Pak Bayoon, July 4, 1929; one male and one female, Patalung, July 5, 1929; one female, Yala, Patani, February 1, 1931.

Dr. W. L. Abbott collected five males and one female in Trang (Prahmon, February 21–April 5, 1896; Tyching, July 19, 1896; Trang

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[29] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 300, 1924.

[30] Verh. Orn. Ges. Bayern, vol. 8, p. 113, 1908.

[31] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 119, 1923.

(no date), 1896, and February 23, 1899); one male and one female, Tenasserim (10 miles north of Victoria Point, January 5, 1900, and Bok Pyin, February 13, 1900); and one male and one female, Packa River, Trengganu, September 25, 26, 1900. He gives the colors of the soft parts as follows: Bill red, tip black, gape yellow; feet red, claws black; iris dark brown.

The range of this form extends from Burma and Siam east to Cambodia, Cochinchina, Annam, and Laos, and south through Peninsular Siam to Singapore, Java, Borneo, and the Philippines.

In Siam it apparently is commoner in the southern districts than in the north, as Dr. Smith secured no specimens there, though it is reported from that part of the country. All of Dr. Smith's and Dr. Abbott's specimens apparently belong to this form.

Herbert's collector took a set of three eggs at Ayuthia, April 12,[32] and another set of two eggs at the same place two weeks later.

EURYSTOMUS ORIENTALIS CALONYX Sharpe

Eurystomus calonyx Sharpe, Proc. Zool. Soc. London, 1890, p. 551 (Nepal).

Typical specimens of this form can easily be distinguished from the resident Siamese race by having the primary coverts and outer secondaries azurite blue instead of black, with little or no blue; the Siamese form is darker above also.

Eurystomus orientalis calonyx breeds in Korea, Manchuria, north China, and middle China and migrates south in winter to the Sunda Islands and the Malay States. Authentic specimens of this race seem to have been taken but rarely in Siam, where, of course, it is only a winter visitor. Gyldenstolpe [33] records it from Pak Koh in the north; Robinson and Kloss [34] have recorded it from Trang in Peninsular Siam, and they [35] record a male from Tung Pran, Tukuatung, western Siam, taken February 14. Chasen and Kloss [36] give it for the Raheng District, and one of their specimens from this collection is now in the United States National Museum. Robinson and Kloss [37] have also recorded it from the Province of Puket, Peninsular Siam, and Ogilvie-Grant [38] from Patani.

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[32] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 301, 1924.

[33] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 118, 1916.

[34] Ibis, 1911, p. 32.

[35] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 119, 1923.

[36] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, 1928, p. 165.

[37] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 95, 1919.

[38] Fasciculi Malayenses, pt. 3 (Birds), p. 110, 1905.

Family UPUPIDAE: Hoopoes

UPUPA EPOPS SATURATA Lönnberg

Upupa epops saturata LÖNNBERG, Ark. för Zool., vol. 5, no. 9, p. 29, 1909 (Kjachta, Mongolia).

Gyldenstolpe[39] took a female at Koh Lak, December 11, 1914; Kloss[40] mentions that Williamson has two birds in his collection that probably belong to this form, one from Bangkok and the other from southeastern Siam, and there is a specimen in the Federated Malay States Museum from Taiping, Perak (date not given).

The form ranges from the Yenesei eastward to Manchuria and northern China, south to Tibet, Yunnan, and Fohkien; on the approach of winter it migrates to southern China, Siam, Burma, Assam, and India.

It is a lighter-colored bird than *U. e. longirostris*. The longer crest feathers usually have a white subterminal spot before the black tip. It is somewhat larger. Either it is not a common winter visitor to Siam or it is overlooked.

UPUPA EPOPS LONGIROSTRIS Jerdon

Upupa longirostris JERDON, The birds of India, vol. 1, p. 393, 1862 (Burma).

One female, Chieng Dao, January 28, 1932; one female, Muang Pai, December 27, 1932; one male, Mae Hong Sorn, January 7, 1933; one male, Udon, February 18, 1929; one male, Korat, March 28, 1929; one male, Knong Phra, Pak Chong, April 15, 1929; two young males, Pak Chong, May 6, 1925; one female, Muang Kanburi, September 11, 1928; one male, Kive Noi, Kanburi, September 20, 1929; one female, Bo Ploi, Kanburi, September 26, 1929; one male, Pran, May 26, 1928; three males and one female, Sam Roi Yot, November 8–9, 1932; four males, Koh Lak, June 12–24, 1933.

This form ranges from Assam and Burma to Siam and eastward at Laos, Tonkin, Annam, Cochinchina, and Cambodia.

In Siam proper it seems to be fairly well distributed over the whole country, but in Peninsular Siam it must be rather scarce. It reaches Patani on the east of the Peninsula and Perlis on the west coast and has been known to straggle as far as Klang, Selangor. Robinson[41] records it from Koh Samui, Bandon; Robinson and Kloss[42] from Pulo Panjang and a couple of islands on the east side of the island of Puket. De Schauensee[43] states that the form is rather common on the plains of northern Siam, less so in the mountains.

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[39] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 111, 1916.

[40] Ibis, 1918, p. 93.

[41] Journ. Federated Malay States Mus., vol. 5, p. 145, 1915.

[42] Journ. Nat. Hist. Soc. Siam, vol. 3, 1919, p. 96.

[43] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 264, 1934.

It can be distinguished from the other form that sometimes straggles to Siam in the winter by having no subterminal white spot below the black tip of the longer crest feathers. Also, it is a darker bird.

One of the specimens from Koh Lak is immature. It is nearly full grown and only differs from the adult in being somewhat lighter in color. The bill is considerably shorter, however.

Family BUCEROTIDAE: Hornbills

BUCEROS RHINOCEROS RHINOCEROS Linnaeus

Buceros rhinoceros LINNAEUS, Systema naturae, ed. 10, p. 104, 1758 (India; Malacca [44]).

Dr. W. L. Abbott collected one male and one female, Endau River, eastern coast of Johore, July 11, 1901. He gives the colors of the soft parts as: Male—iris deep red, eyelids and surrounding skin black; upper mandible, distal half white, basal half yellow, becoming red toward base; lower mandible, distal two-thirds white, basal third yellow; bases of both mandibles black; upper surfaces and sides of casque red, posterior surface black, front surface deep yellow, a narrow black line on sides separates the basal half of the two colors and is continued back between casque and upper mandible, the casque translucent and waxy in appearance, as if modeled in wax; feet pale yellowish green, somewhat dusty, claws pale horn brown, the tips black; weight, 5½ pounds. In the female the iris is pearly white, eyelid black, surrounding naked skin dusky red; bill and casque similar to that of the male, but no narrow black line separates the red and yellow on sides of casque or extends up between the casque and upper mandible; posterior surface of casque red, not black; the red of the casque not so intense as in the male; naked skin of abdomen and under sides of wings dusky greenish; inside of mouth brick red; feet and tarsi as in the male; weight, 4½ pounds.

This species ranges from Sumatra and Billiton to the Malay States. Apparently there are no records of this hornbill for Peninsular Siam. It may occur occasionally in Patani.

Robinson [45] states that it is the commonest of the large hornbills in the south of the Peninsula.

A larger race, *B. r. silvestris* Vieillot, with a differently shaped casque occurs in Java, and another form, *B. r. borneoensis* Schlegel and Müller, is found in Borneo.

DICHOCEROS BICORNIS BICORNIS (Linnaeus)

Buceros bicornis LINNAEUS, Systema naturae, ed. 10, p. 104, 1758 (China; probably Indo-China).

One adult male, Koh Chang, January 15, 1926; one adult male and one immature female, Nong Khor, Sriracha, November 15, 16, 1926;

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[44] Hartert, Nov. Zool., vol. 9, p. 543, 1902.

[45] The birds of the Malay Peninsula, vol. 2, p. 51, 1928.

one adult male, Huey Yang, Kao Luang, Nakon Sritamarat, October 9, 1930.

Dr. W. L. Abbott collected four males and four females in Trang (Tyching, July 25, 1896; Lay Song Hong, November 3–22, 1896; Kao Soi Dao, February 2, 1899; Trang, January 27, 1899); one male, Pulo Terutau, Langkawi Group, April 6, 1904; two males, Tenasserim (Bok Pyin, February 16, 1900; Telok Krang, February 14, 1904).

Dr. Abbott gives the soft parts as: Iris dark red, eyelid black; casque yellow on the sides, deeper on top and tinged with red, especially in the middle, base and front black; lower mandible bluish white, becoming yellow at tip, black at base and along commissure; upper mandible yellow like sides of casque, becoming red at tip, a narrow line along commissure, another along culmen, and base black; feet leaden or olive-brown, claws black (males). The female seems to differ somewhat: Iris white or gray white; orbital skin dull red; casque dull orange yellow, dull red above in front and dark red behind; upper mandible dull orange yellow, dark red at tip; lower mandible pale yellowish white, a yellow patch beneath near tip; base of bill narrowly black; feet pale green, claws bluish horny or greenish leaden.

The weight of six males is given as 5.75 to 7.5 pounds, average 6.63; two females: 4.75 and 5 pounds.

The form ranges from India south of the Himalayas east to Burma, Siam, and Indo-China and south through Peninsular Siam to the Malay States. In Siam it has been taken nearly all over the country and on many of the islands off the coast. A smaller form, *Dichoceros bicornis cristatus* (Vieillot), occurs on Sumatra.

HYDROCISSA CORONATA CONVEXA (Temminck)

Buceros convexus Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 89, pl. 530, 1832 (Java).

Dr. W. L. Abbott collected a subadult female at the Rumpin River, Pahang, June 29, 1902.

This race ranges from Borneo, Java, and Sumatra to the Malay States and Peninsular Siam as far as Patani.

Bonhote[46] records specimens from Bukit Besar and Biserat, Jalor, and Patani. Apparently there are no other Siamese records, but farther south in the Malay States it is not an uncommon bird, frequenting the seacoast near cultivated areas.

HYDROCISSA MALABARICA LEUCOGASTRA (Blyth)

Buceros leucogaster Blyth, Journ. Asiat. Soc. Bengal, vol. 10, p. 922, 1841 (Tenasserim).

Two males and three females, Nong Khor, near Sriracha, November 7, 1924, September 26, 1925, November 13 and 15, 1926; one female,

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[46] Proc. Zool. Soc. London, 1901, vol. 1, p. 70.

Koh Chang, January 15, 1926; one female, Tha Yai, Nakon Sritamarat, July 26, 1926; one male, Nakon Sritamarat, July 8, 1928; two males and one female, Tha Lo, Bandon, September 15 and 17, 1931; one male and one female, Kao Soi Dao, Trang, January 5 and 12, 1934; one male, Hin Lap, eastern Siam, September 30, 1932.

Dr. W. L. Abbott collected six males, three females, and one unsexed in Trang (Prahmon, March 10–31, 1896; Lay Song Hong, October 23, 1896; Telibon Island, March 28, 1896; Trang, January 19 and February 24, 1899); one female, Pulo Langkawi, December 2, 1899; one male, Bok Pyin, Tenasserim, February 19, 1900; and one male, Helfer Island, Mergui Archipelago, March 6, 1900.

Dr. Abbott gives the color of the soft parts as (male): Iris dark brown, in some cases with another paler ring; bill and casque yellowish white, a black patch at the front end of the latter, base of lower mandible and back of casque black; orbital skin bluish white, slaty black in front of eye and at posterior angle; naked skin at base of lower mandible bluish white; gular pouch slaty; feet plumbeous, claws black. Another male has a narrow black line along the commissure. The female does not seem to differ materially from the male except the tip of the bill is black and the base of the lower mandible has a brick-red spot near the base. The weight of one male from Trang is given as 1¾ pounds.

No two adult males in the above series have the casque exactly the same shape, probably because of age. The majority are evidently younger birds, with the casque not fully developed. It probably takes more than one year for the casque fully to develop and probably longer for it to reach the final stage. The male with the most highly developed casque has a large white mark on the inner web of one and a smaller white mark on the outer web of the other central tail feather at the tip; probably this is a very old bird.

The wings of five fully adult males measure 265, 265, 270, 273, and 274 mm. These are all from southern or Peninsular Siam. The wing of the male from Helfer Island measures 260 mm. The wings of five adult females measure 259, 260, 261, 265, and 265 mm. These are also from southern or Peninsular Siam. Neither in the male nor the female does the maximum reach Stuart Baker's maximum,[47] though the minimum is slightly greater. His large specimens must be from more northern birds.

The form ranges from Burma east to Indo-China and south to Siam and down the Peninsula as far as Kedah.

Gyldenstolpe[48] reports it quite common throughout the whole country. Deignan[49] had only one record for Doi Sutep at 2,000 feet in February. Ogilvie-Grant[50] records it from Patani and S. Perak; Robinson[51] from Langkawi, Terutau, and Butang; de Schauensee[52] from Khun Tan, Kengkoi, and Nakon Sritamarat. He also saw a small flock on Doi Sutep.

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[47] The fauna of British India, Birds, ed. 2, vol. 4, p. 290, 1927.

[48] Ibis, 1920, p. 586.

[49] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 162, 1931.

HYDROCISSA MALAYANA (Raffles)

Buceros malayanus RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 292, 1822 (Malacca).

Dr. W. L. Abbott collected two males and two females in Trang (Lay Song Hong, September 16-December 21, 1896; Trang, January 22, 1899) and two females, Endau River, eastern coast of Johore, July 9, 1901. He gives the soft parts as: Iris dark red (male) or dark brown (female); bill ivory white, base black, naked angle of jaw black; feet and claws black.

Apparently there are no previous records for this species in Siam. The species ranges from Borneo and Sumatra to the Malay States and northward in Peninsular Siam to Trang.

Two of the above specimens are immature. One is a male from Lay Song Hong, Trang, November 14, and the other is a female from the Endau River, Johore, July 9. They differ from the adult only in the development of the casque and the color of the bill and casque, which is brownish black. Apparently it takes some time for the casque to reach final development, as another female in which the bill and casque are ivory white has the latter not reaching the full development of the adult female.

RHYTICEROS UNDULATUS (Shaw)

Buceros undulatus SHAW, General zoology, vol. 8, pt. 1, p. 26, 1811 (Java)

One immature male, Nong Khor, near Sriracha, November 16, 1924; one adult female, Koh Chang, January 13, 1926.

Dr. W. L. Abbott collected four males and one female in Trang (Prahmon, March 3, 1896; Lay Song Hong, November 4–26, 1896); two males, Tenasserim (Tanjong Badak, January 6, 1900; Telok Krang, February 17, 1904); and two males, Chance Island, Mergui Archipelago, December 29, 30, 1899. He describes the soft parts as (male): Iris orange, brownish orange-red, red, or brick red; orbital skin dull red, reddish purple, pale purplish red; bill dirty bluish white, base reddish brown; casque white, brownish posteriorly; grooves dark brown; gular pouch yellow with interrupted transverse bar of black; feet and claws black. The female is described as differing from the male by having the gular pouch blue with a dark transverse bar which is interrupted in the middle. The weight of the two males from Trang is given as 4¼ and 5 pounds. The two males from Tenasserim weighed 5¾ and 6¼ pounds; the two males from Chance Island 5½ and 5¾ pounds.

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[50] Fasciculi Malayenses, pt. 3, p. 107, 1905.

[51] Journ. Federated Malay States Mus., vol. 7, p. 150, 1917.

[52] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 263, 1934.

The immature male collected by Dr. Smith has the bill smooth at the base, and the casque is just in the process of forming; otherwise it is like the adult and of about the same size. Even the dark gular bar has begun to form. There are several apparently adult specimens of this species in the United States National Museum that have the corrugations at the base of the bill barely indicated, but they have the interrupted black bar across the gular pouch. It is probable that it takes several years for the bill and casque to reach full development. Apparently the presence of the corrugations at the base of the bill are not entirely diagnostic. This species is evidently much larger than *subruficollis*.

R. undulatus ranges from Borneo, Java, and Sumatra to the Malay States and northward to Siam, Burma, eastern Bengal, and Assam south of the Brahmaputra; east it extends to Cochinchina, Laos, and Annam. In Siam it has been recorded from nearly the whole country, as well as from a number of islands off the coast such as Koh Kut, Terutau, Puket, and Pulo Lontar. Evidently it is the commoner of the two species of *Rhyticeros* occurring in Siam.

RHYTICEROS SUBRUFICOLLIS (Blyth)

Buceros subruficollis Blyth, Journ. Asiat. Soc. Bengal, vol. 12, p. 177, 1843 (vicinity of Moulmein, Tenasserim).

Dr. W. L. Abbott collected one male and one female in Tenasserim (Telok Krang, February 14, 1904; Telok Besar, February 27, 1904); and two males on Domel Island, Mergui Archipelago, January 24, 30, 1904. He gives the soft parts as: Male—iris red or orange-red; orbital skin reddish purple; gular pouch yellow; bill dull ivory white with a bluish tinge, slightly tinged with brown about middle, becoming reddish brown at base, a narrow black line at base of lower mandible; casque yellowish ivory, reddish brown at base, bottom of grooves black or dark brown; tarsi black in front, dull leaden behind, soles gray, and claws black. Female—iris dark orange-brown; throat dark blue, crossbar black; bill ivory white, brownish at base; casque ivory white, bottom of grooves dark brown. The weight of one Telok Krang male is given as 5 pounds; the two males from Domel Island as 4½ and 4 pounds.

The species ranges from Borneo and Sumatra to the Malay States and northward to Tenasserim, southern Burma, southwestern and northern Siam. There are no records of this hornbill from Peninsular Siam and there are apparently not many from the Malay States.

Gairdner[53] records it from the Petchaburi District; Gyldenstolpe[54] reports it from the Meh Lem and states that it is common in northern Siam. It differs from *R. undulatus* in being smaller and in having the base of the bill without grooves. The two specimens from Tenasserim have an incipient roughening of the base of the bill, similar to some specimens of *R. undulatus.*

CRANOBRONTES CORRUGATUS (Temminck)

Buceros corrugatus TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 90, pl. 531, 1832 (Pontianak, west Borneo).

Dr. W. L. Abbott collected a male at Lay Song Hong, Trang, November 4, 1896 and one female on Pulo Rupat, Straits of Malacca, March 17, 1906. He gives the colors of the soft parts of the female as: Iris brownish gray; bill and casque yellow; brownish at base; gular pouch slaty blue; orbital skin pale smaltz blue; feet greenish leaden.

The species ranges from Borneo to Sumatra and the Malay Peninsula as far north as Trang.

Little seems to be known of this species from the Malay States, and there are no previous records for it from Peninsular Siam.

ACEROS NIPALENSIS (Hodgson)

Buceros nipalensis HODGSON, Asiat. Res., vol. 18, p. 178, 1829 (Nepal).

Dr. Smith secured an immature male at Pang Meton (Doi Nangka), April 29, 1931, from a flock of seven or eight seen in high trees.

De Schauensee[54a] took a pair on Doi Sutep, 5,500 feet, and on his third expedition[55] he took two additional males at the same place at 4,600 feet. Lowe[56] records it from the Taok Plateau, Tenasserim, and from 28 miles southeast of Um Pang, Siam.

The species occurs in the sub-Himalayas from Nepal through eastern Assam and Burma to Laos and Tonkin and south to northern Tenasserim and northern Siam.

ANORRHINUS GALERITUS CARINATUS (Blyth)

Buceros carinatus BLYTH, Journ. Asiat. Soc. Bengal, vol. 14, p. 187, 1845 (Malacca); vol. 16, p. 996, 1847 (description).

Dr. W. L. Abbott collected four males, one female, and one unsexed in Trang (Lay Song Hong, September 13–November 3, 1896; Kao Soi Dao, 1000 feet, January 31, 1899) and one unsexed at Telok Besar, Tenasserim, March 1, 1904. He gives the color of the soft parts as: Iris dark red; bill, casque, and feet black; naked skin above and below eye slaty blue and white behind eye; naked throat pale blue, white over angles of jaw.

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[53] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 150, 1915.

[54] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 56, 1913.

[54a] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 573, 1930.

[55] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 263, 1934.

[56] Ibis, 1933, p. 480.

The female taken at Lay Song Hong is immature, but it is in adult plumage. Dr. Abbott records the color of this specimen as: Iris orange, a narrow yellow ring externally; bill white, black at base, casque yellowish; feet black; naked skin about eye slaty blue; gular pouch fleshy white, behind angles of jaw slaty blue.

Dr. Abbott records the weight of two males as 2½ and 2¾ pounds, and of the unsexed specimen from Tenasserim as 2½ pounds.

Robinson and Kloss [57] record it from Kao Ram, 1,200 feet, Nakon Sritamarat; Baker [58] from Tung Song. Ogilvie-Grant [59] and Baker [60] state that the sexes are alike, but apparently adult sexed females in the United States National Museum from Sumatra and Borneo do not bear this out. The female is darker than the male and the bill horn color (in skin); the casque, the commissure at the base of the upper mandible, and the base of the lower mandible only are black, varying somewhat in individual specimens. In the adult male the bill is entirely black.

The four males from Trang and one male from Tenasserim are darker below than four males from Sumatra. The Tenasserim male is darker below than the Trang series. Two males from Borneo resemble the Sumatran specimens. The mainland bird seems to be somewhat larger also. It seems to me it is well worthy of being recognized as a race.

Four males from Trang measure: Wing, 360–370 (364.5); tail, 295–330 (315); culmen with casque, 143.5–158 (150.6) mm. One male from Tenasserim: Wing, 370; tail, 330; culmen with casque, 160 mm. Three males from Sumatra: Wing, 346–355 (350.7); tail, 300–305 (301.7); culmen with casque, 152–159.5 (155.5) mm.

The range would be the Malay States north through Peninsular Siam to southern Tenasserim. *Anorrhinus galeritus galeritus* (Temminck) should be confined to Sumatra and Borneo.

BERENICORNIS COMATUS (Raffles)

Buceros comatus RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 399, 1822 (Sumatra).

Dr. W. L. Abbott took a male at Lay Song Hong, Trang, September 17, 1896.

Robinson and Kloss [61] report this species from Kao Ram, 1,200 feet, and Kao Luang, 2,000 feet, Nakon Sritamarat. De Schauensee [62] received an immature male from Nakon Sritamarat.

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[57] Journ. Federated Malay States Mus., vol. 11, p. 59, 1923.

[58] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 435, 1919.

[59] Catalogue of the birds in the British Museum, vol. 17, p. 391, 1892,

[60] The fauna of British India, Birds, ed. 2, vol. 4, p. 296, 1927.

[61] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 134, 1923.

[62] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 264, 1934.

These are the only definite records I have seen for Siam. The species ranges from southern Tenasserim through Peninsular Siam to the Malay States, Sumatra, and Borneo.

RHINOPLAX VIGIL (Forster)

Buceros vigil Forster, Indische Zoologie, p. 40, 1781 (Tenasserim).

Dr. W. L. Abbott collected one male and two females at Lay Song Hong, Trang, September 16, 24, and November 21, 1896. He gives the color of the soft parts as: Male—iris dark red; front of casque and distal part of beak yellow, rest of casque and bill dark crimson; naked skin of neck and back dull dark crimson; feet brownish red, claws horny brown at tips, paler toward bases and becoming dull greenish horny. Female—similar to the male, chin brown; throat pale blue, neck bluish white; tarsi brownish leaden behind, brick red in front; claws pale yellow-brown, tips brownish black. The weight of the male is given as 5½ and that of the two females as 5¾ and 6¼ pounds. He notes the male as very thin.

The species ranges from Borneo and Sumatra to the northern Malay States and northward through Peninsular Siam to southern Tenasserim. Robinson and Kloss [63] state that it is fairly common in heavy jungle in the Malay States, but never very easy to obtain.

Family CAPITONIDAE: Barbets

CALORAMPHUS FULIGINOSUS HAYI (Gray)

Bucco hayi Gray, Zool. Misc., 1831, p. 33 (Malacca).

Three females, Sichol, Bandon, May 19, 1930; one female, Hoi Tah, Kao Luang, Nakon Sritamarat, July 18, 1928; three females, Wat Kiriwong, Nakon Sritamarat, July 25, 1928.

Dr. W. L. Abbott collected seven males, five females, and one unsexed in Trang (Lay Song Hong, September 2–3, 1896; Chong, January 23, 1897); and two males on the Rumpin River, Pahang, June 10–11, 1902.

Two of the females collected by Dr. Smith at Sichol have larger bills than the rest of the series. They measure 23.5 and 24 mm, while in the other females, from farther south, the culmen measures 20–22.5 mm. There might be a larger race in the north, but for the present I prefer to regard the larger bills of the two females as due to individual variation.

All Dr. Abbott's specimens sexed as males have black bills, while the females have brown bills, and his notes on colors of the soft parts confirm this sexual difference.

Two males and three females from Sumatra have somewhat more reddish throats than the mainland specimens, but the difference is slight. If it is found later that the Sumatra bird is worthy of recognition, then the name *Caloramphus sanguinolentus* Lesson[64] is available for it.

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[63] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 134, 1923.

The form ranges from Sumatra to the Malay States and northward through Peninsular Siam to southern Tenasserim. The northernmost record is one from Tasan, Chumporn, Peninsular Siam, reported by Robinson and Kloss.[65]

In Borneo *C. f. fuliginosus* (Temminck) occurs. It is quite different from the mainland representative, having the throat and chest a bright vinaceous-rufous instead of having the throat obscurely tinged with reddish.

MEGALAIMA VIRENS VIRENS (Boddaert)

Bucco virens BODDAERT, Table des planches enluminéez d'histoire naturelle, p. 53, 1783 (China).

Three males and eight females, Khun Tan, October 16–23, 1929, August 27–30, 1930, and February 13, 1932 (the altitude on this specimen is given as 4,500 feet); one male and one female, Khun Tan Mountains, 4,300 feet, May 17, 1933; one female, Pang Meton (Doi Nangka), May 3, 1931; two males, Doi Hua Mot, August 13, 30, 1934.

This series has been compared with six males and two females from China (Fukien and Szechwan), and if we allow for season there does not appear to be any appreciable difference between the two series.

Some specimens have yellowish shaft streaks on the hindneck, but I believe this is an age character, as several of the birds collected by Dr. Smith that have this feature are undoubtedly subadult; in one it is a light greenish band around the nape rather than streaks; in another immature there are yellowish-green streaks on the throat. Some specimens apparently fully adult retain these streaks on the hind neck, however.

The five males from Siam measure: Wing, 137.5–146 (141.7); tail, 90–98 (93.6); culmen, 39–43.5 (41) mm. Seven females from Siam: Wing, 132–146 (140.5); tail, 78–103 (90.6); culmen, 35–44 (41) mm. Six males from China (Fukien, 2; Szechwan, 4): Wing, 143–155 (147); tail, 91–108.5 (100.3); culmen, 39–43 (40.7) mm.

This large barbet has a wide range, extending through southern China from Fukien and Chekiang to southern Szechwan and Yunnan and south through Tonkin, northern Annam, and Laos, to northern and western Siam and central and eastern Burma.

It has been taken in northern Siam by a number of collectors, but always in the mountains at moderate elevations. Deignan[66] reports that it occurs commonly on Doi Sutep from 2,700 to 5,000 feet; later

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[64] Rev. Zool., 1839, p. 139.

[65] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 159, 1923.

[66] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 158, 1931.

Mr. Aagaard[67] secured one from the summit, 5,600 feet. Gairdner[68] took one in the Raheng District, western Siam. Lowe[69] reports it from 28 miles east of Um Pang.

Two other forms of this species have been described:

> *Megalaima virens marshallorum* Swinhoe (northwestern Himalayas eastward to Sikkim).
>
> *Megalaima virens magnifica* Stuart Baker (Assam to Manipur, Looshai and Chin Hills, hill tracts of Tippera and Chittagong). Of this race I have seen no specimens.

THEREICERYX LINEATUS INTERMEDIUS Stuart Baker

Thereiceryx lineatus intermedius Stuart Baker, Bull. Brit. Orn. Club, vol. 39, p. 19, 1918 (Pahpoon, Burma).

One male, Doi Angka, December 2, 1928; one immature male, Doi Phra Chao, August 2, 1934; one male, Nan, April 16, 1930; two males and one female, Ban Nam Kien, Nan, April 21–22, 1930; one female, Kumpawapi, March 20, 1929; one female, Mae Hong Sorn, January 8, 1933; one female, Melang Valley, January 1, 1933; one female, Mesuya Valley, January 2, 1933; one female, Ta Fang, January 17, 1933; one female, Lampang, November 15, 1928; two males, Knong Phra, February 25, 1924, April 13, 1929; two males and one female, Sakeo, near Krabin, May 7–9, 1928; two males, Pang Sok, August 15–18, 1926; three males and one female, Pak Chong, February 19, 1924, May 8, 1925, May 10, 1926, December 22, 1926; one male, Chantuk, June 17, 1934; five males, one female, and one unsexed, Nong Khor, near Sriracha, September 22–October 1, 1925, March 19–20, 1926, November 8–10, 1926; one female, Nong Yang, October 20, 1931; one male, Muang Kanburi, April 12, 1928; one male, Sai Yok, Kanburi, September 23, 1929; one male and one female, Bo Ploi, Kanburi, September 7–8, 1928; one male, Nongkai, February 18, 1929; four males and one female, Pran, May 27, June 3, 1928, and April 2, 1931.

Dr. Smith gives the colors of the soft parts as follows: Bare skin around the eye bright yellow; bill reddish horn; legs deep yellow; iris brown.

Dr. W. L. Abbott collected three males and two females in Trang (Prahmon, March 22 and April 6, 1896; Tyching, May 29, 1896); two females, at Tanjong Dungun, Trengganu, September 20, 1900. He describes the soft parts as: Male—iris brown; orbital skin yellow; bill pale fleshy brownish; feet dull horn yellow, claws brownish black. One female has the iris in two circles, inner brownish red, outer pale brown.

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[67] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 235, 1932.

[68] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 169, 1928.

[69] Ibis, 1933, p. 476.

There seems to be no constant difference in color in specimens from northern Siam and Peninsular Siam and very little difference in size. There is a gradual diminution in size from north to south, but the difference is not great enough to recognize by name, and for this reason I place under one name all the specimens of this species from Siam.

Five males from northern Siam (4) and eastern Burma (1) measure: Wing, 126.5–132 (128.4); tail, 74–84 (80.6); culmen, 29–33 (31.4) mm. Ten males from eastern and southeastern Siam: Wing, 120–133 (125.9); tail, 73–84 (78.6); culmen, 29–32 (30.5) mm. Eight males from southwestern Siam (5) and Peninsular Siam (3): Wing, 121–128.5 (124.7); tail, 72–81 (75.4); culmen, 28–32 (30.6) mm.

The range of the form is quite an extensive one, being found from central and southern Burma southward throughout Siam proper and through Peninsular Siam to the Malay State of Trengganu; eastward it extends to Laos, Annam, Cochinchina, and Cambodia.

The form is not apparently uncommon all over Siam, from the north, south throughout Peninsular Siam. Robinson and Kloss[70] say that it does not occur in the Federated Malay States.

There is considerable variation in the above series, from a specimen with the head, throat, and chest cartridge buff, obsoletely streaked with drab, to others in which the head above is almost fuscous, with the light streaking almost reduced to shaft streaks and the streaks on the chest equally dark. These variations seem to be purely individual or to be due to age. There is one young bird collected by Dr. Abbott that still retains the heel pad tubercles and that in size and plumage I cannot distinguish from the adult, so this feature must be retained for some time after the bird leaves the nest and their use is no longer needed. Dr. Smith took a male in similar condition. There are several other specimens in like condition in the collection of the United States National Museum, and it is the only way to distinguish the young after they become full grown or nearly so. The wings of these specimens measure somewhat smaller than the average. Count Gyldenstolpe[71] has given a figure of the heel pad of this form.

There are two other forms of this barbet recognized by Stuart Baker,[72] namely, *Thereiceryx lineatus lineatus* (Vieillot), from Java and Bali, and *Thereiceryx lineatus hodgsoni* (Bonaparte), from the Himalayas of India. The latter differs from *T. l. intermedius* in being larger. I have seen no specimens of it. Specimens from northern Siam have been assigned to *hodgsoni*, but I believe incorrectly so.

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[70] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 165, 1923.

[71] Ark. för Zool., vol. 11, no. 12, p. 5, 1917.

[72] Ibis, 1919, p. 214.

THEREICERYX FAIOSTRICTUS FAIOSTRICTUS (Temminck)

Bucco faiostrictus TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 88, pl. 527, May 1831 (Cochinchina).

Five males and four females, Khun Tan, October 17–23, 1929, August 28–September 10, 1930; one male, Doi Phra Chao, August 1, 1934; one female, Aranya, July 20, 1930; three females, Hin Lap, October 1–3, 1932; four males and two females, Pak Chong, February 17 and May 14, 1925, April 24, 1926, November 30, 1929, June 22–26, 1934; nine males and six females, Sikeu, near Korat, February 14–15, 1926; one male and one female, Lamton Lang, May 26, June 2, 1934; three males and one female, Sakeo, near Krabin, May 4–5, 1928; three males and one female, Nong Yang, November 6–9, 1931; one male, Huey Yang, Sriracha, August 1, 1932; two females, Ban Sadet, Sriracha, May 29, 1925; one male Nong Khor, near Sriracha, February 6, 1927; one male Kao Seming, Krat, October 9, 1928; one male, Lem Sing, Chantabun, March 16, 1930; two females Kao Sabap, October 24–28, 1933.

This large series is fairly uniform. Some specimens have a bluish tinge to the lower parts, while in a few specimens they are more tinged with yellow, especially on the chest, than in the clear vanderpoel green of the chest and abdomen of the majority of the series. The bright tufts on each side of the jugulum are sometimes orange and sometimes deepen to scarlet with a yellow fringe; sometimes the bright tufts are lacking altogether, in which case the examination of the heel pad usually indicates such specimens are birds of the year.

A specimen in the United States National Museum (no. 278323) from Daban, southern Annam, has the pileum a lighter brown and the buffy streaks are broader than in any specimen in the series from Siam or in four specimens from Cochinchina before me. There are also some other slight differences that need not be mentioned at this time. A recognizable race may occur in this part of its range.

The form occurs from northern Siam to southwestern Siam and eastward to Cambodia, Laos, Cochinchina, and Annam. In Siam it occurs nearly all over the country and as far to the westward as Hat Sanuk, southwestern Siam, whence it has been recorded by Robinson and Kloss.[73] It does not occur in Peninsular Siam, and the above record is also the most southern in this direction.

The present form is easily distinguished from *Thereiceryx lineatus intermedius* by the yellowish-green auriculars and the bright orange or scarlet jugular tufts of the former and numerous other differences but the above are sufficient. *T. f. praetermissus* Kloss is confined to Southern China and Tonkin. This form I have not had the pleasure of examining.

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[73] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 166, 1923.

CHOTOREA MYSTACOPHANES MYSTACOPHANES (Temminck)

Bucco mystacophanes Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 53, pl. 315, Dec. 1824 (Sumatra).

Cyanops mystacophanes aurantiifrons Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 3, p. 100, 1919 (Nong Kok, Ghirbi, Peninsular Siam).

Three males, Sichol, Bandon, May 16–19, 1930; one male, Ban Kiriwong, Nakon Sritamarat, July 10, 1928; two females, Kao Luang, Nakon Sritamarat, July 16–23, 1928; two males, Wat Kiriwong, Nakon Sritamarat, July 25, 1928; one male, Tha Lo, Bandon, September 25, 1931; one male Kao Chong, Trang, September 8, 1933.

Dr. W. L. Abbott took three males and five females in Trang (Kao Nok Ram, 1,000 feet, January 4, 1899; Lay Song Hong, September 2–November 22, 1896); two females in Trengganu (Dungun River, September 24, and Tanjong Laboha, September 29, 1900); two males in Pahang (Rumpin River, May 25, and July 12, 1902); and two males in Tenasserim (Bok Pyin, February 15, 1900, and Telok Besar, March 18, 1904). He describes the soft parts as: Iris brown; bill black (male), black with the base of the lower mandible pale fleshy or pale gray (female); feet greenish leaden or olive.

Robinson and Kloss [74] state that the characters upon which they founded their *C. m. aurantiifrons* are not stable and cannot be maintained.

There is a sexual difference in this species. The female differs from the male in having the throat light green with light yellow shaft streaks instead of scarlet-red; the forehead is a much lighter yellow separated from the red occipital spot by a narrow green band; bluish green above the eye instead of black; malar spot bluish green instead of bright yellow; the blue suborbital and jugular spots much reduced and lighter in color; the red frontal apex spot is present but faint. This is quite different from Robinson and Kloss's [75] remarks upon this sex. The above is probably a fully adult female, but there are six other females in the series that have a yellow frontal band and differ from the one described only in having a broader green band separating the yellow frontal band from the red occipital spot. There is only one female in the series without a yellow frontal band, and in this specimen it is bluish green. All the females have a small red spot at the frontal apex. Two specimens marked as females have a few red feathers appearing on the throat and the red spots on each side of the chest are more pronounced than in the other females (nos. 160232 and 160234, Lay Song Hong, Trang, October 30 and November 6); they may be wrongly sexed or very old birds. Several immature males in the series show that the adult plumage is acquired early. The yellow frontal band is acquired early and even in the youngest is broader and deeper in color than in the two females mentioned. So it may well be very old females have the throats slightly tinged with scarlet or a few feathers of this color mixed in.

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[74] Journ. Siam Soc. Nat. Hist., vol. 5, p. 161, 1923.

[75] Ibid., p. 162.

The form ranges from the southern half of Tenasserim south through Peninsular Siam to the Malay States, and Sumatra. The bird occurring on the Batu Islands, off the western coast of Sumatra, has been separated as *Chotorea mystacophanes ampala;* and that from Borneo as *C. m. humei.*

CHOTOREA CHRYSOPOGON LAETUS Robinson and Kloss

Chotorhea chrysopogon laetus Robinson and Kloss, Journ. Federated Malay States Mus., vol. 8, pt. 2, p. 141, 1918 (Bukit Tangga, Negri Sembilan).

One male, Yala, Patani, January 31, 1931; one female, Kao Luang, 3,000 feet, Nakon Sritamarat, July 10, 1928; one male, Ban Hoi Tah (Nok Koh Chang), Kao Luang, Nakon Sritamarat, July 10, 1928; one male, Sichol, Bandon, May 19, 1930.

Dr. W. L. Abbott took one male and two females, Lay Song Hong, Trang, September 29, November 5 and 22, 1896; one unsexed, Kao Soi Dao, 1,000 feet, Trang, February 14, 1899, and one female, Rumpin River, Pahang, May 28, 1902. He describes the soft parts as: Iris reddish brown; bill black, base of lower mandible leaden; feet pale green, claws dark horn brown or leaden, tips black.

The above series illustrates the range of this form fairly well. It extends from the southern Federated Malay States north to the province of Bandon in Peninsular Siam.

Chotorea chrysopogon chrysopogon of Sumatra has lighter yellow malar patches and *C. c. chrysopsis* of Borneo is somewhat smaller, with bright-yellow tips to the feathers of the forehead and the blue of the jugulum extending farther forward, and it is a somewhat brighter green.

CHOTOREA RAFFLESII MALAYENSIS Chasen

Chotorhea rafflesii malayensis Chasen, Orn. Monatsb., vol. 43, p. 147, 1935 (Ubin Island, near Singapore).

Six males and two females, Bangnara, Patani, May 23, 1924, July 4–15, 1926; one male and one female, Tha Lo, Bandon, September 23 and 24, 1931; three males and three females, Kao Soi Dao, Trang, January 4–23, 1934.

Dr. W. L. Abbott collected three males and one female in Trang (Prahmon, April 3, and Lay Song Hong, September 2, 3 and November 23, 1896); one male, Bok Pyin, Tenasserim, February 14, 1900; and two males at the Rumpin River, Pahang, May 28 and June 22, 1902. He describes the soft parts as: Iris dark brown; bill black; feet leaden, claws black.

This considerable series from the Malay Peninsula differs from Sumatran birds only in having a somewhat lighter blue superciliary and throat and smaller bill. It is not a well-marked race, however.

Six males from Sumatra (2), Banka (3), and Billiton (1) measure: Wing, 116–125 (120.2); tail, 63.5–73 (66.3); culmen, 37–40.5 (38.8) mm. Ten males from the Malay Peninsula: Wing, 115–125 (120.6); tail, 61.5–70 (66); culmen, 35–38.5 (36.6) mm.

Chotorea rafflesii malayensis ranges from Singapore north through Peninsular Siam to southern Tenasserim. The farthest north in Peninsular Siam at which it has been taken is supposed to be opposite the island of Puket, but August Müller [76] gives simply the Peninsula of Malacca. Dr. Abbott's specimen from Tenasserim is evidently the northernmost record to date.

In Borneo a closely related form, *Chotorea rafflesii borneensis*, with a still lighter blue throat and superciliary, occurs. *C. r. rafflesii* is confined to Sumatra and Banka.

CYANOPS ASIATICA DAVISONI (Hume)

Magalaima davisoni HUME, Stray Feathers, vol. 5, p. 108, 1877 (Meetan, southern Tenasserim).

Five males and three females, Khun Tan Mountains, 3,000–4,300 feet, November 21, 1928, May 9–16, 1933; three males and six females, Khun Tan, 4,000 feet, October 17, 1929, August 27–29, 1930, February 15–March 3, 1932; two males and two females, Doi Hua Mot, August 19–29, 1934.

In the majority of the above series the band across the vertex is blue; in two males and three females, which I regard as intermediates, it is black with a strong blue tinge. The records of *C. a. asiatica* from northern Siam are open to question, it seems to me.

De Schauensee [77] records *davisoni* from Chiengrai and Chieng Sen, and on his third expedition [78] he collected additional specimens at Chiengdao and at Khun Tan. The northern birds are regarded as intermediate between this and the nominate form; Deignan [79] records it from Doi Sutep, 2,500–4,000 feet; Chasen and Kloss [80] from the Raheng District of western Siam.

The form extends from Peninsular Burma through western and northern Siam to Laos, Tonkin, and northern Annam.

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[76] Die Ornis Salanga, p. 74, 1882.

[77] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 569, 1930.

[78] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 255, 1934.

[79] Journ. Siam Soc. Nat. Hist. Soc. Suppl., vol. 8, p. 158, 1931.

[80] Journ. Siam Soc. Nat. Hist. Soc. Suppl., vol. 7, p. 169, 1928.

CYANOPS FRANKLINI RAMSAYI (Walden)

Megalaema ramsayi Walden, Ann. Mag. Nat. Hist., ser. 4, vol. 15, p. 400, 1875 (Karennee Hills, Burma).

Three females, Doi Angka, 7,000–8,000 feet, December 2 and 6, 1928; one female, Doi Sutep, 5,600 feet, December 15, 1928; two males and three females, Doi Nangka, November 2–10, 1930; April 24–25, 1931; three males and three females, Pang Meton (Doi Nangka), April 30–May 4, 1931; six males, three females, and one unsexed, Doi Hua Mot, August 12–September 2, 1934.

This considerable series is fairly uniform. The sexes are alike in color and size.

Six males measure: Wing, 99–102 (100.3); tail, 59–62 (60.2); culmen, 22–26 (23.7) mm. Nine females: Wing, 97–105.5 (99.5); tail, 55–63 (58.9); culmen, 23.5–27 (25) mm.

The form ranges from the southern Shan States and Burma to Muleyit, Tenasserim, and northern and western Siam.

Gyldenstolpe[81] first reported this form from northern Siam from Doi Par Sakeng; Gairdner[82] took it in the Raheng District, western Siam, and it has been taken on Doi Sutep by a number of collectors beside Dr. Smith.

It is evidently a common mountain bird in northern Siam. De Schaunensee[83] states that on Doi Sutep it occasionally is found as low as 2,500 feet but abundant above 4,500 feet.

CYANOPS FRANKLINI TRANGENSIS Riley

Cyanops franklini trangensis Riley, Proc. Biol. Soc. Washington, vol. 47, p. 116, 1934 (Kao Nom Plu, 3,000 feet, Trang, Peninsular Siam).

Dr. W. L. Abbott collected two males and three females in the mountains of Trang (Kao Nom Plu, 3,000 feet, February 22–24, 1897; Kao Soi Dao, 2,500 feet, February 12, 1899). He describes the soft parts as: Iris dark brown or dark red; bill black, leaden at base beneath; feet greenish leaden or pale green.

This form is similar to *ramsayi* of northern Siam but has a larger heavier bill; the crown spot and throat are a more golden yellow; the supra-auriculars, auriculars, sides of neck, and jugulum darker and duskier; above and below a darker green.

The two males and three females measure: Wing, 98–101 (99); tail, 55–61 (59); culmen, 26–28 (27) mm.

The form so far as known is confined to the mountains of Trang. It may extend to the mountains of Nakon Sritamarat and Bandon.

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[81] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 99, 1916.

[82] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 169, 1928.

[83] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 256, 1934.

CYANOPS HENRICI HENRICI (Temminck)

Bucco henrici Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 88, pl. 524, May 1931 (Sumatra).

Dr. W. L. Abbott took a single male at Lay Song Hong, Trang, December 17, 1896. He describes the soft parts as: Iris dark brown; bill black; feet pale green. This form has not been recorded from Peninsular Siam before.

Robinson [84] says that this barbet is a low-country bird, occurring from Penang south to Johore. It also inhabits Sumatra.

The single female examined by me from Sumatra is larger than the male from Trang; the blue crown spot is smaller and less bright; the yellow forehead duller. It measures: Wing, 97; tail, 53; culmen; 28 mm. The single male from Trang measures: Wing, 94.5; tail, 51.5, culmen, 26 mm.

Five old unsexed specimens from Malacca have the culmen equally small or somewhat smaller. If further specimens from Sumatra should show that these differences are constant, then the mainland form is worthy of recognition as a distinct form, for which the name *Bucco rubritorquis* Peale [85] would be available.

A smaller form of the species is found in Borneo.

CYANOPS INCOGNITA (Hume)

Megalaima incognita Hume, Stray Feathers, vol. 2, p. 442, 1874 (25 miles north of Yea and Karope, Tenasserim).

One male, Kao Kuap, Krat, December 27, 1929; two females, Kao Lem, Chantabun, December 27 and 29, 1930; one female, Kao Sabap, November 2, 1933.

A female in the United States National Museum from the upper Tavoy River, Burma, has a bluer throat, more bluish edgings to the feathers of the forehead, and darker and more pronounced malar and postocular stripes; it also is slightly smaller. Wing, 96; culmen, 23 mm.

The two females from Kao Lem measure: Wing, 101–103; culmen, 24.5–25.5 mm. The male from Kao Kuap: Wing, 108.5; culmen, 25 mm. The female from Kao Sabap: Wing, 97; culmen, 24 mm.

De Schauensee [86] took a male at Chantabun, southeastern Siam, April 2, 1933.

The species ranges from Tenasserim and the northern part of Peninsular Siam to southeastern Siam, Laos, Tonkin, Annam, and Cambodia. It can readily be distinguished from the *Cyanops asiatica* group of forms, with which it has sometimes been confused, by having the crown green, the red occipital spot and red forehead much reduced in area, a black rictal stripe, and a narrow ring of yellow feathers around the eye. It can be distinguished from the *Cyanops oorti* forms by the green instead of yellow crown; bluish instead of yellow throat; and a number of other characters.

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[84] The birds of the Malay Peninsula, vol. 2, p. 92, 1928.

[85] U. S. Exploring Expedition, vol. 8, p. 133, 1848.

[86] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, pp. 4, 255, 1934.

MEZOBUCCO DUVAUCELII CYANOTIS (Blyth)

Bucco cyanotis Blyth, Journ. Asiat. Soc. Bengal, vol. 16, p. 465, 1847 (Arracan).

Eight males and five females, Khun Tan, August 29–September 10, 1930; one male, Doi Nangka, November 17, 1930.

Seven males from northern Siam measure: Wing, 81.5–85 (83.5); tail, 44.5–49 (46.7); culmen, 17.5–19 (18) mm. Four females from northern Siam: Wing, 80–82.5 (80.9); tail, 43–47 (44.9); culmen, 18–18.5 (18.4) mm.

The form ranges from Sikkim to Assam and south through Burma to northern Tenasserim and northern Siam and eastward to Laos and Tonkin.

Count Gyldenstolpe[87] recorded it between Bang Hue Hom and Kao Plyng, northern Siam; de Schauensee[88] from Doi Sutep, 3,000 feet, and Chengmai. Deignan[89] says that it is rare on Doi Sutep between 3,000 and 5,500 feet. Previously to Dr. Smith's taking the form at Khun Tan, Count Gyldenstolpe had collected it at the same locality.

MEZOBUCCO DUVAUCELII ORIENTALIS Robinson

Mesobucco duvaugli [sic] *orientalis* Robinson, Ibis, 1915, p. 738 (Ok Yam, Franco-Siamese Boundary).

One female, Sakeo, near Krabin, May 5, 1928; one female, Klong Yai, Sriracha, July 24, 1932.

These two specimens, along with a female from Ok Yam, the type locality, and a male from Koh Chang, have larger bills and the red rictal patch has broader yellow tips to the feathers than *M. d. cyanotis*.

De Schauensee,[90] with a larger series available for study (from Bua Yai, Kon Ken, and Chantabun), has called attention to other differences, namely: The ear coverts are tinged with green and there is a red band below the blue of the throat. In the series of northern birds examined by me this band is sometimes present, however. There appears to be little difference in color or size between the sexes.

One male from Koh Chang and three females from southeastern Siam measure: Wing, 80–84.5 (82.4); tail, 41–46 (44.2); culmen, 20–21.5 (20.9) mm.

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[87] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 51, 1913.

[88] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 570, 1930.

[89] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 159, 1931.

[90] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 256, 1934.

Stuart Baker[91] records it from Hupbon in southeastern and Hinlap in eastern Siam; Robinson[92] from Koh Chang and Ok Yam.

The range of the form so far as known is eastern and southeastern Siam. It probably extends also into southern Indo-China.

MEZOBUCCO DUVAUCELII STUARTI Robinson and Kloss

Mesobucco duvauceli stuarti Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 3, p. 100, 1919 (Klong Tung Sai, Junk-seylon, Peninsular Siam).

One adult male, three immature males, two adult females, and one immature female, Bangnara, Patani, June 5, 1924, July 8–21, 1926; two adult males and one immature male, Ban Kiriwong, Nakon Sritamarat, July 10–11, 1928; one female, Wat Kiriwong, Nakon Sritamarat, July 25, 1928.

Dr. W. L. Abbott collected five males, eight females, and one unsexed specimen in Trang (Lay Song Hong, August 18–December 17, 1896; near Kao Nok Ram, December 29, 1898 and January 3–5, 1899; Kao Soi Dao, 1,500 feet, February 17, 1899). He gives the soft parts as: Iris dark brown; bill black (male), black, leaden beneath at base (female); feet dull pale green or olive, claws brownish black.

This series differs from *M. d. cyanotis* of northern Siam in having the wing and tail somewhat shorter, the red patches on sides of head brighter with little or no yellow mixture in the suborbital spot, and the black bases of the feathers of the jugular region showing more plainly and forming a more or less well-defined spot.

The Patani specimens are nearer those of Trang than the Sumatran race, *M. duvaucelii duvaucelii;* in the latter the ear coverts are black, the blue of the vertex is deeper and extends farther back, and the red markings on the side of head are brighter. *M. d. stuarti* has blue ear coverts with a greenish tinge. The Patani birds are, however, brighter than Trang specimens. The Bornean race, *M. d. borneensis* Parrot, also has black ear coverts, like that of Sumatra; it appears to be slightly larger. Robinson and Kloss[93] think the bird from the Malayan States of the Malay Peninsula belong to the Bornean form. I have not examined any specimens south of Patani, except four poor specimens from Malacca, which do not appear to have the ear coverts black. If the Malayan bird should prove to be separable from that of Borneo, then S. Baker's name *Cyanops duvaceli robinsoni,*[94] type from Klang, Selangor, would be available for it. Possibly this race may reach western Patani.

The range of *M. d. stuarti* extends from southern Tenasserim through Peninsular Siam south to Patani. The farthest north in

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[91] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 430, 1919.

[92] Ibis, 1915, p. 738.

[93] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 167, 1923

[94] Bull. Brit. Orn. Club, vol. 39, p. 20, 1918.

Siam at which it has been recorded, so far as known to me, is Robinson and Kloss's [95] record from Tapli, Pakchan Estuary, Peninsular Siam; Robinson [96] records it from Bandon; Robinson and Kloss [97] from Kao Luang, 2,000 feet, Nakon Sritamarat.

Eight males measure: Wing, 74.5–81 (78); tail, 40–43 (41); culmen, 16.5–19 (17.8 mm). Six females: Wing, 75–79 (77); tail, 38–42 (39.6); culmen, 16.5–18 (17.6) mm.

The immature birds in the above series are of nearly the same size as the adult. All are clear green, without any markings. In one (marked male) a few blue feathers are beginning to appear on the throat, and the black jugular spot is clearly indicated. A single red feather is appearing on the right side above the ear coverts, and there are two or three blue feathers appearing in the crown.

Chasen [98] uses Horsfield's name *Bucco australis* [99] for this form group. The name belongs to some species of *Xantholaema*, however.

XANTHOLAEMA HAEMACEPHALA INDICA (Latham)

Bucco indicus LATHAM, Index ornithologicus, vol. 1, p. 205, 1790 (India).

One male, Melang Valley, December 31, 1932; one female, Mae Hong Sorn, January 3, 1933; one male, Rayasothon, March 23, 1929; one immature female, Nan, April 15, 1930; four males and one female, Bangkok, October 30, 1923, May 19, 1928, September 22, 1930, April 30 and May 4, 1934; two males, Knong Phra, April 16, 1929; one male, Tha Chang, March 14, 1927; three females and one unsexed, Pak Chong, May 9, 14, 1925, December 20, 1926; four females, Pang Sok, August 12, 1926; one male, Lat Bua Kao, August 3, 1929; two females, Chantabun, May 26, 1929; one male, Rajaguri, April 10, 1926; one female, Bangnara, Patani, June 3, 1924; one male, Yala, Patani, February 1, 1931.

Dr. W. L. Abbott collected two adult males, one immature male, and one female in Trang (Prahmon, April 6, 1896; Tyching, April 22, 23, 1896); one female, Champang, Tenasserim, December 13, 1903. He gives the soft parts as: Iris brown; orbital skin brick red; bill black (male), black with the base fleshy white (female); feet red, claws black.

This form has a wide range, extending from eastern Bengal, Sikkim, Nepal, Burma, Yunnan, Laos, Annam, Cochinchina, and Cambodia to Siam and south through Peninsular Siam to the northern Malay States. In Siam it seems to be generally distributed from the north throughout the country. Herbert [1] has found it breeding near Bangkok and states that eggs may be found from February to April.

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[95] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 166, 1923.

[96] Journ. Federated Malay States Mus., vol. 5, p. 94, 1915.

[97] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

[98] Bull. Raffles Mus., no. 11, p. 137, 1935.

[99] Trans. Linn. Soc. London, vol. 13, p. 181 (not 101), 1821

[1] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 299, 1924.

The immature female taken by Dr. Smith at Nan, April 15, is about half grown. Above it is serpentine green, the wings and tail brighter, without the red forehead of the adult; the black crown band is barely indicated by darker centers to the feathers of the region, making it somewhat duskier than the rest of the head; the supraorbital and auricular yellow spots have appeared; the black of the sides of the head of the adult is replaced by dusky; the throat is light green-yellow; the jugulum grayish olive with a greenish wash; remaining underparts reed yellow, the sides and flanks streaked with yellowish olive. A slightly older bird collected by Dr. Smith at Pak Chong, May 14, has a few red feathers appearing on the jugulum; the throat is coming in a deeper yellow, and the chest and abdomen are becoming paler. A young male collected by Dr. W. L. Abbott at Prahmon, Trang, April 6, is of about the same age as Dr. Smith's Nan female; the former is quite different above, being light bice green and paler yellow below.

A number of forms are recognized, including the following:

Xantholaema haemacephala delica (Parrot) (Sumatra).
Xantholaema haemacephala haemacephala (Müller) (Philippine Islands).
Xantholaema haemacephala lutea (Lesson) (Ceylon and India generally to western Bengal).

Family PICIDAE: Woodpeckers, Piculets

PICUS VITTATUS EISENHOFERI Gyldenstolpe

Picus vittatus eisenhoferi GYLDENSTOLPE, Orn. Monatsb., 1916, p. 28 (Pa Hing, northern Siam).

One male, Nan, April 13, 1930; one female, Aranya, April 13, 1930; one female, Bung Borapet, June 21, 1932; one male and two females, Bangkok, November 16, 1923, March 12, 1924, January 1, 1926; four males and three females, Pak Chong, May 5, 11, 1925, November 16, 24, 1929, June 22, 26, 1934; two males, Lam Klong Lang, near Pak Chong, June 7, 15, 1925; one female, Muek Lek, April 19, 1933; three males and one female, Lat Bua Kao, July 29–August 9, 1929; one female, Pang Sok, August 19, 1926; one male, Sikeu, near Korat, February 17, 1926; one male and one female, Tha Chang, March 20, 1927; two males and one female, Sakeo, near Krabin, May 5–31, 1928; one male and four females, Lamton Lang, May 25–June 1, 1925; two females, Hupbon, October 26 and November 5, 1931; three males and four females, Nong Khor, near Sriracha, September 25, 26, 1925, March 21, 23, 1926, February 12, 1927; one male and one female, Klong Yai, Sriracha, July 23, 28, 1932; one female, Huey Yang, Sriracha, August 4, 1932; one male, Ban Tarn Dam, Sriracha, March 4, 1930; one female, Ban Sadet, near Sriracha, May 26, 1925; one male and two females, Nong Yang, east of Sriracha, October 20–November

13, 1931; two males, Kao Sabap, November 3, 16, 1933; one male, Kao Seming, Krat, October 17, 1928; one male, Krat, December 20, 1929; one female, Muang, Kanburi, April 11, 1928; one male, Kwe Noi, Kanburi, September 21, 1929; two males and one female, Sam Roi Yot, November 7, 8, 1932. Dr. Smith also took a male at Vientiane, Laos, February 21, 1929.

This series shows a good deal of seasonal variation. In the unfaded fall specimens the jugulum and foreneck are pyrite yellow, the chin light drab, the streaks on the breast and belly olive-green, the mantle warbler green. By the breeding season the mantle becomes more yellowish, the jugulum and foreneck lose the greenish tinge, and the streaks on the breast and belly tend to become less green and more brownish.

A young female from Lat Bua Kao, July 29, resembles the adult, but the throat and jugulum are drab, the streaks on the breast and belly fuscous, and the back is a darker, less yellowish green. Another immature female has the streaks on the breast and belly more lightly indicated than the Lat Bua Kao specimen and brownish, and the jugulum has a yellowish tinge; it is slightly older and was taken at Huey Yang, Sriracha, August 4. Three younger females from Pak Chong and Lamton Lang, May 27 and June 26, in fresh unworn plumage have the chest mignonette green, the throat drab. The immature male acquires an almost adult plumage before the streaks below are replaced by olive-green streaked feathers; the pileum is a lighter red and the mantle a darker green, however.

One adult female (no. 306909) has some red-tipped feathers on the nape.

Some specimens have irregular buffy bars on the middle tail feathers and shadow bars on the outer tail feathers, but on others these are absent. The bars on the middle tail feathers show on the upper side, but on the outer tail feathers they show only on the under side.

The range of this form is from extreme eastern Burma and the southern Shan States to Siam proper, Laos, southern Annam, Cochinchina, and Cambodia.

Dr. Smith's collection covers the Siamese range of *eisenhoferi* fairly well, except the north. De Schauensee [2] states that it is not common in northern Siam. In eastern, central, southeastern, and southwestern Siam it is apparently not uncommon. In southwestern Siam it has been taken as far south as Hua Hin and Nong Kae [3] and the locality Sam Roi Yot (Pran River), where Dr. Smith collected specimens, is not far off. Apparently it has not been taken in Peninsular Siam. Herbert [4] states that it breeds near Bangkok in February.

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[2] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 248, 1934.

[3] Williamson, Journ. Nat. Hist. Soc. Siam, vol. 2, p. 319, 1917.

[4] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 298, 1924.

PICUS VITTATUS CONNECTENS (Robinson and Kloss)

Gecinus vittatus connectens Robinson and Kloss, Bull. Brit. Orn. Club. vol. 40, p. 13, 1919 (Langkawi Island).

This race was founded upon specimens taken upon Langkawi and Dayang Bunting, Langkawi Islands.

There is a female in the United States National Museum from Great Karimon Island collected by Dr. W. L. Abbott, May 28, 1903, that agrees with the description of this form. It is more of a grass-green above, with scarcely any yellow wash on the rump when compared with the same sex of *Picus vittatus eisenhoferi;* below it is more buffy on the throat and jugulum, and the chest and belly are less heavily streaked with a more brownish olive-green. The wing measures 133.5 mm.

This form very likely occurs on some of the Siamese islands such as Terutau. *Picus vittatus vittatus* Vieillot, a smaller and more richly colored form, is found in Java, the Malay States, and (?) Sumatra.

PICUS VIRIDANUS (Blyth)

Picus viridanus Blyth, Journ. Asiat. Soc. Bengal, vol. 12, p. 1000, 1843 (Arrakan).
Gecinus weberi Müller, Die Ornis der Insel Salanga, p. 69, 1882 (Salanga).
Picus viridanus meridianus Kloss, Ibis, 1926, p. 689 (Lamra, Trang, Peninsular Siam).

One female, Sichol, Bandon, May 15, 1930; one male, Tha Lo, Bandon, September 18, 1931; one male, Kao Soi Dao, Trang, January 4, 1934.

Dr. W. L. Abbott collected the following: one male and four females, Trang (Prahmon, February 27, March 13, and April 16, 1896; Trang, January 25 and March 3, 1899); and two males in Tenasserim (Tanjong Badak, January 12, 1900; Bok Pyin, February 17, 1900). He gives the soft parts as: Iris dark reddish brown or dark red; bill dull horny black, base of lower mandible yellowish green or yellow; feet dull greenish, pale green, or olive green.

No Burma specimens have been available, except the two from Tenasserim collected by Dr. Abbott. All the above series seem to belong to one form.

Four males from Koh Lak, southwestern Siam, south to Trang, measure: Wing 132–143 (137); tail, 94–100 (96.5); culmen, 34–36.5 (35.3) mm. Two males from Tenasserim: Wing, 135.5–138; tail, 96.5–101.5; culmen, 34–36 mm. Six females from Koh Lak south to Trang: Wing, 128–136 (131.6); tail, 89–100 (95.7); culmen, 31–33 (32.2) mm.

If the Peninsular bird should eventually be deemed worthy of recognition, Müller's name *weberi* would be applicable.

One of the males from Trang has a wing measuring 143 mm, which is greater than Kloss's limit for the race, but the other Trang male has not.

The species ranges from Burma, except the extreme northwestern part, south to Tenasserim, western, southwestern, and Peninsular Siam as far as Patani. Lowe[5] reports it from 28 miles east of Um Pang, Siam, which is about as far north as I have seen any records. It is evidently common or fairly so in Peninsular Siam, where it has been taken as far south as Patani.[6]

The species can be easily distinguished from *Picus vittatus* by the streaked foreneck and chest and from *Picus myrmecophoneus* by the larger size, darker coloration below, and blackish upper mandible.

PICUS MYRMECOPHONEUS MYRMECOPHONEUS Stresemann

Picus myrmecophoneus Stresemann, Verh. Orn. Ges. Bayern, vol. 14, p. 289, 1920 (new name for *Picus striolatus* Blyth, 1844; Himalayas).

Picus xanthopygius Oberholser, Proc. Biol. Soc. Washington, vol. 32, p. 8, 1919 (not of Bonaparte, 1850).

One male, Bo Ploi, Kanburi, September 8, 1928.

This woodpecker is easily distinguished from *Picus vittatus* forms by having the foreneck and chest streaked and from *P. viridanus* by its much lighter underparts and the different pattern of the feathers of these parts. In *viridanus* the feathers of the breast have the shafts whitish, then a broad band of fuscous, then a narrow subterminal band of pale yellow. In *P. m. myrmecophoneus* the feathers of the breast have the shafts blackish, then a broad band of light yellow, and a subterminal band of blackish. *P. m. myrmecophoneus* is much smaller than *P. viridanus* or *P. vittatus eisenhoferi.*

The specimen collected by Dr. Smith is subadult but differs from the adult only in minor details. The red of the head is confined to the forehead, with only a few scattering red feathers in the crown and nape and the upper mandible is black instead of horny brown.

The range of this form extends from Ceylon and Peninsular India to the Himalayas, eastern Assam, Chin Hills, Burma, Siam, Cochinchina, and Cambodia. This seems to be more or less of a rare woodpecker in Siam. Gyldenstolpe[7] records it from northern Siam; Chasen and Kloss[8] as *Picus viridanus,* later corrected to *Picus myrmecophoneus,*[9] from the Raheng District. Kloss[10] took an adult male at Koh Lak, the most southern specimen known to me. It was later acquired by the United States National Museum. De Schauensee[11] took a male at Tamuang recorded as *Picus xanthopygius.*

A larger race, *Picus myrmecophoneus dehrae* Baker, inhabits Kumaon, Garhwal, Nepal, and upper Pegu.

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[5] Ibis, 1933, p. 473.

[6] Ogilvie-Grant, Fasciculi Malayenses, pt. 3, p. 101, 1905.

[7] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 229, 1915.

[8] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 170, 1928.

[9] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 235, 1932.

[10] Ibis, 1918, p. 104.

[11] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 247, 1934.

PICUS CANUS HESSEI Gyldenstolpe

Picus canus hessei GYLDENSTOLPE, Orn. Monatsb., 1916, p. 28 (Pak Koh, northern Siam).

Gecinus canus microrhynchus ROBINSON and KLOSS, Bull. Brit. Orn. Club, vol. 40, p. 12, 1919 (Koh Lak, southwestern Siam).

One female, Chieng Dao, January 29, 1932; one female, Melang Valley, January 1, 1933; one male, Huey Me Sae, December 24, 1932; one male, Lomkao, February 20, 1934; one male, Knong Phra, April 15, 1929; three females, Kwe Noi, Kanburi, September 20, 1929; two males, Sai Yok, Kanburi, September 23, 1929; two males and two females, Pak Chong, May 9, 1925, December 18, 20, 1926; one male, Sakeo, near Krabin, May 8, 1928; one female, Lamton Lang, May 30, 1934; two females, Lat Bua Kao, July 29, August 9, 1929; one female, Chantuk, June 14, 1934; two males, Huey Yang, Sriracha, August 4, 1932; two males and three females, Pran, May 26, 28, 1928, April 2–4, 1931.

Apparently there is little difference between specimens from northern and eastern Siam, and little or none between the latter and birds from southwestern Siam.

Four males from northern and western Siam measure: Wing, 151–153 (151.5); culmen, 40–41.5 (40.7) mm. Six males from central, eastern, and southwestern Siam: Wing, 148–152.5 (150.2); culmen, 40–42 (41) mm. Five females from northern and western Siam: Wing, 144–153 (150); culmen, 35.5–41 (38.4) mm. Seven females from eastern and southwestern Siam: Wing, 137–154 (148); culmen, 37–40.5 (38.9) mm.

The two smallest male specimens measured are from Huey Yang, Sriracha, with wings of 137–141 mm, culmens, 38–39 mm, but there are indications in the plumage that they are birds of the year, and their measurements have not been included in the averages above. One of these males (no. 331880) has the rump orange instead of lemon-yellow and the upperparts more of an orange citrine. Both of these immature males resemble the adult, except the lowerparts have only the chest washed with a lighter greenish yellow, the belly being grayish with slightly darker shadow bars; the red on the crown is more restricted, as are the black malar streak and black of the nape.

The form ranges from northern, central, and southern Burma east to Siam proper, Laos, Cochinchina, and Annam. In Siam it has been recorded from all parts of the country, from the north as far to the southwest as Koh Lak. In Peninsular Siam no form of this species is known, but in the mountains of the Malay States *Picus canus robinsoni* (Grant) is found.

PICUS ERYTHROPYGIUS ERYTHROPYGIUS (Elliot)

Gecinus erythropygius Elliott, Nouv. Arch. Mus. Paris, vol. 1, Bull., p. 76, pl. 3, fig. 1, 1865 (Cochinchina).

One male and one female, Udon, March 19, 1929; one female, Sakon Nakon, March 11, 1929, one male, Ban Den Muang, February 25, 1929; one female, Pak Chong, December 21, 1926; one female, Pang Sok, August 15, 1926; one female, Nong Mong, Muang Krabin, August 30, 1925; three males and one female, Chantuk, June 13–16, 1934.

The four specimens from Chantuk are all birds of the year with dark bills at the base, but not so dark as in *nigrigenis;* the three males have the throats and sides of neck washed with orange. One male (no. 313262) has a white postocular streak; the other males have none. Three (out of five) females have a white postocular streak.

This form is easily distinguished from the next (*nigrigenis*) by its horn-colored bill. It ranges from southern Annam and Cochinchina to Cambodia, lower Laos, and eastern and southeastern Siam.

Kloss [12] records it from Lat Bua Kao; Gyldenstolpe [13] from Sakerat.

PICUS ERYTHROPYGIUS NIGRIGENIS (Hume)

Gecinus nigrigenis Hume, Stray Feathers, vol. 2, p. 444, 1874 (Tenasserim).

One female, Doi Angka (lower slopes), December 9, 1928; one male, Doi Phra Chao, August 5, 1934; one male and one female, Ban Nam Kien, Nan, April 19, 21, 1930; one female, Muang Pai, December 27, 1932; one male and one female, Mekhan, February 7, 8, 1932; one male and one female, Huey Salob, January 3, 1933; one male, Mae Hong Sorn, January 5, 1933; one male, Khonka Valley, January 19, 1933; one female, Mesarieng, January 21, 1933; one female, Wang Kien, March 13, 1934; four males and three females, Muang Kanburi, April 10–14, and September 10, 1928; two males and one female, Bo Ploi, Kanburi, September 26, 1929.

The red crown patch in the male varies from quite restricted in some specimens to one (no. 324155, Bo Ploi, Kanburi, September 26) in which the whole pileum, except the forehead, is red. Judged by analogy, the latter is a bird of the year, though it appears to be adult. In none of the series, except one female, is there a light postocular streak. In several of the males the outer tail feather has a grayish spot at the tip of varying extent on the underside.

This form is easily distinguished from *erythropygius* by its entirely black bill.

The form ranges from Karenni and Tounghoo, Burma, to northern, western, and southern Siam. It is a common bird in northern and western Siam and probably reaches southwestern Siam, but I have seen no records from this part of the country.

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[12] Ibis, 1918, p. 102.

[13] Kungl. Svenska Vet.-Akad Handl., vol. 50, no. 8, p. 47, 1913.

There is a specimen in the British Museum from Meklong, central Siam.[14] De Schauensee [15] says that it is a common bird in dry lowland forest, ascending the hills to about 1,500 feet.

CIRROPICUS CHLOROLOPHUS CHLOROLOPHOIDES (Gyldenstolpe)

Brachylophus chlorophoides GYLDENSTOLPE, Orn. Monatsb., 1916, p. 29 (Koon Tan, northern Siam).

One male, Doi Hua Mot, August 24, 1934; four males and three females, Khun Tan Mountains, 3,000–4,300 feet, November 21, 1928, May 11–17, 1933; five males and four females, Khun Tan, 4,000 feet, October 17–22, 1929, August 23–September 6, 1930, March 1, 4, 1932; one female, Doi Nangka, November 22, 1930; one female, Pang Meton (Doi Nangka), May 2, 1931; one male, Khan River, February 8, 1932; one male, Huey Salob, January 3, 1933; one female, Ban Nam Kien, Nan, April 21, 1930; one female, Wang Kien, Kanburi, March 12, 1934.

I have had only one male of *Cirropicus chlorolophus chlorolophus* for comparison. It is more of a yellowish green above; the nuchal crest is a deeper yellow; the chest is more of a deep olive, less greenish; the red on outer web at the base of the inner primaries is less pronounced; the red on the forehead and superciliary is less extensive, and there are some other differences.

C. c. chlorolophoides ranges from the southern China and Kachin Hills, Burma, south to the southern Shan States and Tenasserim and eastward to northern Siam and northwestern Laos. In Siam it is apparently common all over the northern part of the country. Dr. Smith's specimen from Wankien is from about as far to the southwest as the form is known to range.

C. c. chlorolophus (Vieillot) occurs from Sikkim, Bhutan, Assam, and the hill tracts of eastern Bengal to the northern Shan States and Yunnan. Other forms occur in India. The southern forms are listed under *conjunctus*.

CIRROPICUS CHLOROLOPHUS CONJUNCTUS Riley

Cirropicus chlorolophus conjunctus RILEY, Proc. Biol. Soc. Washington, vol. 48, p. 53, 1935 (Kao Sabab, southeastern Siam).

One male, Lat Bua Kao, August 7, 1929; one female, Pang Sok, August 26, 1926; one male, Pak Chong, May 5, 1926; one male, Lamton Lang, May 28, 1934; one male, Sakeo, near Krabin, May 8, 1928; two males and one female, Nong Khor, near Sriracha, November 23, 1924, September 25, 1925, February 12, 1927; two females, Huey Yang, Sriracha, August 1, 4, 1932; one male, Kao Seming, Krat, January 2, 1930; one male, Kao Sabap, October 28, 1933.

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[14] Catalogue of the birds in the British Museum, vol. 18, p. 68, 1890.

[15] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 249, 1934.

Dr. Smith describes the soft parts of a male from Nong Khor as: Iris reddish brown; bill black above, yellow below.

This form is lighter above and below than *C. c. chlorolophoides*; the nuchal crest is paler; and it averages somewhat smaller, especially the bill. Six males measure: Wing, 127.5–137.5 (132.4); tail, 80–90. 5 (86.4); culmen, 24.5–26.5 (25.7) mm. Six females: Wing, 125–136 (131.4); tail, 85–92 (88); culmen, 23.5–26 (24.8) mm.

Ten males of *C. c. chlorolophoides* measure: Wing, 131.5–142 (135.8); tail, 84–96 (89.9); culmen, 24.5–30.5 (27.8) mm. Ten females: Wing, 134–140 (136.7); tail, 87.5–100 (94.3); culmen, 25–28 (26.6).

Two males of *C. c. krempfi* from Trang Bom, Cochinchina, are somewhat darker and smaller than *C. c. conjunctus*. They measure: Wing 126–129; tail, 85–90; culmen, 24.5–26 mm.

The immature male of *Cirropicus chlorolophus* has the chest brownish and the crown as well as the forehead with red tips to the feathers. This brownishness of the chest and red on the crown persist some time after the birds reach adult size. Judged by this criterion, the male from Pak Chong and the male from Kao Seming are immature. The chest in the latter is becoming greenish, and it has lost most of the red tips to the crown feathers; it was taken January 2. The Pak Chong male, taken May 5, has the whole chest and throat olive-brown and the bars on the breast and belly lightly indicated hair brown.

C. c. conjunctus is apparently confined to eastern and southeastern Siam. It probably ranges into Cambodia also, but I have seen no records from there.

A closely related form, *Cirropicus chlorolophus krempfi* (Delacour and Jabouille) occurs in Cochinchina; *C. c. annamensis* (Meinertzhagen) in southern Annam; *C. c. laotianus* (Delacour and Jabouille) in Tonkin, northern Annam, and northern Laos; *C. c. citrinocristatus* (Rickett) in central Fohkien, China. *C. c. rodgeri* (Hartert and Butler) is an isolated form inhabiting the mountains of Perak.

CIRROPICUS PUNICEUS CONTINENTIS (Robinson and Kloss)

Brachylophus puniceus continentis Robinson and Kloss, Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 204, 1921 (Tapli, Pakchan Estuary, Renong, North Malay Peninsula).

One male, Kao Luang, Nakon Sritamarat, July 17, 1928; two males, Tha Lo, Bandon, September 15, 16, 1931; two males and one female, Kao Soi Dao, Trang, January 4–22, 1934; two males, Bangnara, Patani, July 5, 8, 1926.

Dr. Abbott collected two males and four females in Trang (Prahmon, March 23, April 2, 1896; Lay Song Hong, August 18, 31, 1896; Trang, February 24, 1899); one female, Dungun River, Trengganu, September 22, 1900, and one male, Rumpin River, Pahang, June 21,

1902. He describes the soft part as: Iris dark red; orbital skin light blue; upper mandible black, lower mandible yellow; feet greenish yellow; dull olive, or dull green.

The form ranges from the Malay States north through Peninsular Siam to southern Tenasserim. Robinson and Kloss [16] record it from Tapli and Tasan, northern Peninsular Siam, which seems to be about the northern limit of its range in Siam. De Schauensee,[17] having for study two males from Nakon Sritamarat, questions the validity of the form.

Eight adult males from Peninsular Siam measure: Wing, 126–136.5 (130.9); culmen, 28–31 (29.6) mm. Five adult males from Sumatra (2) and Nias (3): Wing, 123–130 (126.6); culmen, 27–30 (28.6) mm.

These measurements indicate an average larger size for the continental bird. None of the adult males measured from the continent by me has wings as small as those given by de Schauensee, except one, and that shows signs of being immature. Its measurements are not included, therefore, in those given above. This specimen differs from the adult male only as follows: The breast is brownish with round, deep, olive-buff spots, and the wings are a deeper red; the wing measures 123 mm. The two birds mentioned by de Schauensee may not be fully adult.

Cirropicus puniceus observandus (Hartert), a closely related form, inhabits Sumatra, Nias, Banka, and Borneo. *C. p. puniceus* (Horsfield) is confined to Java.

CALLOLOPHUS MINIATUS PERLUTUS Kloss

Callolophus mineatus perlutus Kloss, Ibis, 1918, p. 110 (Koh Lak, southwestern Siam).

One male and two females, Pran, May 28, 1928, April 2, 1931.

Dr. W. L. Abbott collected one female at Bok Pyin, Tenasserim, February 15, 1900, and one male at Telok Besar, Tenasserim, March 19, 1904.

This form is a larger form than *C. m. malaccensis*.

Three males measure: Wing, 138–142 (140.3); tail, 77–84 (81.3); culmen, 28–28.5 (28.3) mm. Three females: Wing, 133–143 (138); tail, 78–85.5 (82.8); culmen, 26–29 (27) mm.

It ranges northward from the Pakchan Estuary through southern Tenasserim and southwestern Siam to south-central Siam.

There is a specimen in the British Museum from Meklong,[18] which is as far north as I have seen any records for Siam. Robinson and Kloss [19] assign specimens from Chumporn and Pakchan to the southern form. In Tenasserim it is said to go as far north as Tavoy.

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[16] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 174, 1923.

[17] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 248, 1934.

[18] Catalogue of the birds in the British Museum, vol. 18, p. 124, 1890.

[19] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 191, 1923.

CALLOLOPHUS MINIATUS MALACCENSIS (Latham)

Picus malaccensis LATHAM, Index ornithologicus, vol. 1, p. 241, 1790 (Malacca)

Two males, Bukit, Patani, January 23, 1931; one immature male, Pak Bhayoon, Tale Sap, July 4, 1929; one immature male, Pataluug, July 5, 1929; one male, Kao Chong, Trang, September 1, 1933; one female, Waterfall, Trang, August 25, 1933; one male and one female, Tha Lo, Bandon, September 17, 22, 1931; one male, Sichol, Bandon, September 2, 1929.

Dr. W. L. Abbott collected the following: Three males and two females, Trang (Tyching, May 29, 1896; Lay Song Hong, December 27, 1896; near Chong, January 25, 1897; Kao Nom Plu, 1,000 feet, February 23, 1897; Trang, January 21, 1899); two males and one female, Rumpin River, Pahang, June 14, 23, 1902. He describes the soft parts as: Iris dark red or brown; upper mandibles black; lower bluish white; feet green.

The two immature males collected by Dr. Smith are much paler than the adults, and the bills are shorter; they are about adult size.

There seems to be little difference in size between the sexes. Ten males measure: Wing, 125–130.5 (127.6); tail, 68–79.5 (73.6); culmen, 25–28 (25.8) mm. Five females: Wing, 128–135 (130); tail, 74–78 (74.9); culmen, 24–25.5 (24.7) mm.

This form ranges from the Malay States north to Pakchan Estuary, whence it was recorded by Robinson and Kloss[20]; it also occurs on Sumatra, Banka, and Billiton.

Callolophus miniatus miniatus (Forster) is confined to Java.

C. m. dayak Stresemann is found in Borneo.

C. m. niasensis (Buttikofer) is confined to the island of Nias, off the western coast of Sumatra.

CHRYSOPHLEGMA HUMII HUMII Hargitt

Chrysophlegma humii HARGITT, Ibis, 1889, p. 231 (Malacca and Klong, Selangor).

One male and two females, Bangnara, Patani, May 31, 1924, July 4, 1926; three males, Kao Soi Dao, Trang, December 21, 1933–January 1, 1934; one male and two females, Kao Luang, Nakon Sritamarat, July 17, 23, 1928; one male, Ban Huey Ta, Nakon Sritamarat, July 12, 1928; two females, Sichol, Bandon, May 19, 1930.

Dr. Smith gives the soft parts of a pair shot at Bangnara, Patani, May 31, as: Male—iris reddish brown; bill black; legs light green. Female—iris dull reddish brown; bill blackish brown above, dark blue below; legs dark green.

Dr. W. L. Abbott collected the following in the Malay Peninsula: Four males and two females, Trang (Lay Song Hong, September 22, 30, December 21, 24, 1896; Trang, January 26, 1899; Kao Soi Dao,

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[20] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 188, 1923.

1,000 feet, February 20, 1899); one male, the Dindings, Straits of Malacca, April 14, 1900; one male and one female, Endau River, east coast of Johore, June 28 and July 13, 1901; and one male, and two females, Rumpin River, Pahang, June 2, July 11, 22, 1902.

Dr. Abbott gives the soft parts as: Iris reddish brown, dark red, or deep crimson; bill black above, leaden below; greenish at the base of lower mandible; feet dull green, pale green, or olive green; orbital skin green, dull green, or pale green.

The male apparently differs from the female only in having the malar region dusky with buffy spots (the malar region in the female being hazel without spots). A male collected by Dr. Abbott on the Rumpin River, Pahang, July 11, has the malar region unspotted and the breast and belly olive-brown with a slight citrine wash. It is probably a bird of the year.

This form ranges from southern Tenasserim through Peninsular Siam to the Malay States, Sumatra, and Banka. Robinson and Kloss [21] state that it is rare in the northern part of the Peninsula, barely reaching Bankasoon, Tenasserim. Judged by the number of specimens collected by Dr. Abbott and Dr. Smith, it is probably not uncommon in the south.

Chrysophlegma humii saba Chasen and Kloss inhabits Borneo.

C. mentale (Temminck) of Java is larger and quite distinct from the forms inhabiting Borneo and the mainland and in my opinion should rank as another species.

CHRYSOPHLEGMA FLAVINUCHA LYLEI Kloss

Chrysophlegma flavinucha lylei Kloss, Ibis, 1918, p. 110 (Koh Lak, southwestern Siam).

One male, Doi Hua Mot, September 6, 1934; one male and two females, Khun Tan, 4,000 feet, October 22, 1929, February 17, 1932; two males, Khun Tan Mountains, 3,000–4,000 feet, November 21, 1928; May 16, 1933; one female, Sobpung, December 21, 1932; one male, Kwe Noi, Kanburi, September 21, 1929.

I have only one male of *C. f. flavinucha* with which to compare the above series. The Siamese specimens have the throat and nuchal crest lighter; the back greener; the forehead a darker reddish brown; the chest darker; and the breast darker, more of a light citrine drab. The increased white on the foreneck in the Siamese race, mentioned in the original description, does not hold.

Chasen and Kloss [22] record it from the Raheng District, and a male from their collection is in the United States National Museum; they have also recorded it from Doi Sutep, 4,600 feet.[23] De Schauensee [24] found it rather common at Chiengmai, Metang, and Chieng Dao. It has been reported also from a few other localities in northern Siam.

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[21] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 192, 1923.

[22] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 170, 1928.

[23] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 235, 1932.

[24] Proc. Acad Nat. Sci. Philadelphia, vol. 86, p. 249, 1934.

The form is evidently confined to northern, western, and southwestern Siam. The records from southern Burma and Tenasserim probably belong to this form. I have seen no records south of the Island of Puket.

Chrysophlegma flavinucha flavinucha (Gould) occurs in the Himalayas east to Assam and south to northern Burma.

CHRYSOPHLEGMA FLAVINUCHA PIERREI Oustalet

Chrysophlegma pierrei OUSTALET, La Naturaliste, 1889, p. 44 (lower Cochinchina).

One female, Kao Pae Pan Nam, Lomsak, February 18, 1934; one female, Aranya, July 14, 1930; one male, Udon, February 18, 1929; one female, Pong, Udon, February 17, 1929; one male and one female, Lat Bua Kao, July 30, 1929; one female, Sakeo, near Krabin, May 6, 1928; one male, Ban Ko Tan, March 4, 1929; one female, Ban Nakae, March 3, 1929; two females, Pang Sok, August 26, 1926; one male, Sikeu, near Korat, February 17, 1926; one male, Ban Tarn Dam, March 7, 1930; one male, Lamton Lang, May 28, 1934; one female and one immature male, Chantuk, June 14–15, 1934.

The male of this form is readily distinguished from *lylei* in being lighter below; the foreneck tinged with brown in the spotted area; the spotted area of the foreneck extending farther forward, sometimes to the mentum on each side and separating the yellow malar region from the yellow of the chin; the malar region and chin a lighter yellow; upper mandible usually dark to the tip; size smaller.

The female of *pierrei* differs from the same sex of *lylei* in having the brown of the throat and malar region lighter and the upper mandible dark throughout. One male *pierrei* (no. 313255), from Ban Ko Tan, has a pale tip to the upper mandible like *lylei*, but differs otherwise. The two females from Pang Sok, August 26 (nos. 308100 and 308101), have the breast and belly washed with greenish yellow; in the remainder of the series these parts are grayish olive.

Five males of *pierrei* measure: Wing, 156–164 (159.8); tail, 110.5–125 (117); culmen, 34.5–36.5 (35.7) mm. Six males of *lylei:* Wing, 156–173 (166); tail, 108.5–122.5 (115.8); culmen, 36–40 (38.4) mm. Nine females of *pierrei:* Wing, 150–166 (160); tail, 104–116.5 (111.6); culmen, 31.5–37 (34.2) mm. Three females of *lylei:* Wing, 161–169 (165.3); tail, 110–119 (113.7); culmen, 32–36 (34.7) mm.

This form is confined to central, eastern, and southeastern Siam, Cambodia, and Cochinchina. It probably occurs also in southern Laos. De Schauensee[25] took a female at Bua Yai, and other collectors had previously recorded it from eastern Siam.

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[25] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 249, 1934.

Chrysophlegma flavinucha wrayi Sharpe is found in the mountains of the Malay States. *C. f. annamensis* Delacour and Jabouille occurs from Annam to western Tonkin and western Laos. *C. f. styani* Grant is confined to Hainan and eastern Tonkin. *C. f. ricketti* Styan is apparently known only from two specimens from central Fohkien, China.

CHLOROPICOIDES RAFFLESI PENINSULARIS (Hesse)

Gauropicoides rafflesi peninsularis HESSE, Orn. Monatsb., 1911, p. 192 (Malacca).

One male, Kao Soi Dao, Trang, December 23, 1933.

This seems to be a rare bird north of the Malay States; at least there are few records from the north. The Trang male measures: Wing, 142; tail, 101; culmen, 32 mm. A male from Malacca: Wing, 143; culmen, 34 mm. A female from the same place: Wing, 150; culmen, 32.5 mm.

An adult male from Banka has the breast and belly cinnamon-brown, with an olive wash quite different from the dark citrine of the Trang male. There is no reddish wash on the rump; wing, 144 mm. The different color of the lower parts is likely due to stain or wear.

C. r. peninsularis ranges from southern Tenasserim south through Peninsular Siam to Singapore. Stuart Baker[26] records it from Tung Song from Herbert's collection; Robinson and Kloss[27] from Tasan, Chumporn; de Schauensee[28] from Nakon Sritamarat. It is apparently more abundant in the Malay States. Most of the specimens in collections have come from Malacca.

Two other races have been recognized: *Chloropicoides rafflesi rafflesi* (Vigors), from Sumatra and Banka, and *C. r. borneonensis* (Hesse), from Borneo.

The differences in the three races seem to rest principally upon size. *C. r. borneonensis* is small; wing of male in the United States National Museum, 133 mm, and of female, 123 mm; but in the other two races the differences seem to be average only and somewhat doubtful.

GECINULUS VIRIDIS VIRIDIS Blyth

Gecinulus viridis BLYTH, Journ. Asiat. Soc. Bengal, vol. 31, p. 341, 1862 (Tenasserim).

One male, Doi Phra Chao, August 6, 1934; one male, Koh Lak, June 9, 1933; two males and one female, Pran, April 1, 3, 1931; two males and one female, Muang Kanburi, April 11–15, 1928; one male and two females, Kwe Noi, Kanburi, September 21, 22, 1929; one female, Sai Yok, Kanburi, September 22, 1929; one male, Kanburi, May 10, 1934; one female, Ban Kam Pran, Pasak River, October 18,

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[26] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 426, 1919.

[27] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 175, 1923.

[28] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 252, 1934.

1932; one male and two females, Pak Chong, May 15, 1925, December 20, 1926, November 21, 1929; one male, Pang Sok, August 26, 1926; one male, Lat Bua Kao, July 30, 1929.

This form ranges from the Shan States, central and southern Burma, to northern, southwestern, central, and eastern Siam. Robinson and Kloss [29] record it from Tapli, Pakchan Estuary, which is about as far to the southwest as it ranges. It is rarely found far away from bamboo jungle. De Schauensee [30] collected specimens at Tamuang, Chantabun, Kanburi, and Chieng Dao and states that the specimen from Chantabun is slightly darker below than the birds from the three other localities. Gyldenstolpe [31] found it not uncommon at Doi Par Sakeng and Khun Tan, northern Siam. Chasen and Kloss [32] record it from the Raheng District in the western part of the country.

In the above series specimens in fresh unworn plumage are distinctly green below; as they wear and fade they become quite brown on the lowerparts. It is quite necessary when comparing birds from different geographic areas to use specimens in fresh plumage.

HYPOPICUS HYPERYTHRUS HYPERYTHRUS (Vigors)

Picus hyperythrus VIGORS, Proc. Zool. Soc. London, 1831, p. 23 (Himalayas).

One male, Huey Salob, January 3, 1933.

This form ranges from Nepal and Sikkim to eastern Assam, western Yunnan, and western Szechwan south to eastern Bengal, Manipur, and northern Siam.

Apparently there is only one previous record for Siam, that of Williamson for Memaw, Lampang.[33]

DRYOBATES ATRATUS (Blyth)

Picus atratus BLYTH, Journ. Asiat. Soc. Bengal, vol. 18, p. 803, 1849 (Tenasserim).

Two males and three females, Khun Tan Mountains, 2,000–4,000 feet, November 19–23, 1928, May 10, 1933; four males and two females, Khun Tan, 3,000–4,000 feet, February 17–March 2, 1932; one male and one female, Doi Sutep (summit), December 15, 1928; two males, Doi Nangka, April 26, 1931; one male and one female, Pang Meton (Doi Nangka), May 4 and 5, 1931; one female, Doi Hua Mot, September 4, 1934.

One male, February 22, and one female, February 17, taken at Khun Tan are immature, though nearly of adult size. The only way they differ from the adults is in having the breast and belly duskier, the red restricted on the under tail coverts, and the crown, but not the nape, tinged with carmine.

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[29] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 175, 1923.

[30] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 250, 1934.

[31] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 92, 1916.

[32] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 170, 1928.

[33] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 61, 1916.

No specimens from Burma have been examined.

The species ranges from the Khasia Hills to Cachar, Manipur, and Burma and south to Tenasserim and northern Siam. De Schauensee[34] on his third expedition adds the locality Chieng Dao to the Siamese records for the species; it had been previously recorded by several authors from Doi Sutep from 4,600 feet to the summit.

DRYOBATES ANALIS LONGIPENNIS (Hesse)

Dendrocopos analis longipennis Hesse, Orn. Monatsb., 1912, p. 82 (Bangkok).

Two males, Bangkok, August 8, 1924, September 20, 1930.

The form ranges from upper Burma southward to Tenasserim and Siam as far as latitude 12° N.; eastward it extends to Cochinchina and southern Annam.

Deignan[35] reports it from Chiengmai; de Schauensee[36] from Meklong and Chiengmai; on his third expedition, besides taking it at Chiengmai and Bangkok, de Schauensee took a female at Hua Mak;[37] Robinson and Kloss[38] record it from Koh Lak. Herbert found[39] it nesting around Bangkok in January and February.

The only form of the species with which I have compared the two Bangkok males is *Dryobates analis montis* Robinson and Kloss[40] from western Java. The latter is quite ochraceous below and has a shorter wing. *D. a. analis* Bonaparte is confined to the eastern part of Java.

YUNGIPICUS NANUS CANICAPILLUS (Blyth)

Picus canicapillus Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 197, 1845 (Arracan).

Two males, Doi Angka, 4,000 feet, December 2, 3, 1928; one female, Doi Sutep, December 13, 1928; one male and one female, Doi Phra Chao, August 2, 5, 1934; one male, Khun Tan Mountains, 2,000 feet, November 23, 1928; one female, Khun Tan, August 28, 1930; one female, Mekhan, February 7, 1932; one female, Bo Ploi, Kanburi, September 26, 1929; one male and one female, Pak Chong, May 7, 1925; two females, Muek Lek, April 25, 1933; one male and three females, Chantuk, June 13, 14, 1934.

Dr. W. L. Abbott took one male and two females in Tenasserim (Tanjong Badak, January 6, 1900, March 26, 1904; Bok Pyin, February 13, 1900).

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[34] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 250, 1934.
[35] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 157, 1931.
[36] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 567, 1930.
[37] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 250, 1934.
[38] Journ. Nat. Hist. Soc. Siam, vol 5, p. 177, 1923.
[39] Journ. Siam Soc. Nat. Hist. Suppl., vol 6, p. 323, 1926.
[40] Journ. Federated Malay States Mus., vol. 11, p. 53, 1923.

The three specimens from Tenasserim have the white more restricted on the upper parts, wings, and tails than do the specimens from farther north, but they are nearer the northern form than to the form occurring in the southern Malay Peninsula.

The form ranges apparently from eastern Bengal to the whole of Burma, Siam proper, Cambodia, Laos, southern Annam, Tenasserim, and probably northern Peninsular Siam.

Robinson and Kloss[41] record specimens from Tung Pran, Takuatung, and Namchuk, Pakchan Estuary, that probably belong here. Robinson[42] records it from Klong Yai, southeastern Siam. It has been taken by various collectors in the northern part of the country and has been recorded from Doi Sutep as high as 5,500 feet. Just how far south it goes in Peninsular Siam is not known; probably not south of latitude 10° N.

YUNGIPICUS NANUS AURITUS (Eyton)

Tripsurus auritus EYTON, Ann. Mag. Nat. Hist., ser. 1, vol. 16, p. 229, 1845 (Malacca).

Iyngipicus canicapillus suffusus ROBINSON and KLOSS, Bull. Brit. Orn. Club, vol. 40, p. 14, 1919 (Kuala Lumpur, Selangor).

One male, Bangnara, Patani, July 7, 1926; one male, Bukit, Patani, January 27, 1931; one female, Patalung, July 9, 1929.

Dr. W. L. Abbott collected the following: Five males and three females, Trang (Prahmon, February 21–March 22, 1896; Lay Song Hong, October 9, 1896; Naklua, March 3, 1899); one male, Tanjong Dungun, Trengganu, September 20, 1900; one male, Tanjong Silantei, east coast of Johore, July 27, 1901. He describes the soft parts as: Iris reddish brown, brownish red or pink in the males; dark brown in the females; bill black, horny blue at base below; feet dull greenish, dull leaden, greenish plumbeous, olive plumbeous, or leaden blue.

In the above series the white barring or spotting averages narrower and more restricted above and on the tail than the series from northern and eastern Siam; on the whole the streaking below is a little heavier. The majority of northern birds have white markings or spots on the middle tail feathers while in the southern Peninsula birds the middle tail feathers are without white spots or they are much restricted. There seems little difference in size between northern and Peninsular birds, except the bill in the latter averages large.

Four males from northern Siam and one from Tenasserim measure: Wing, 80–86 (82); tail, 35–39 (35.9); culmen, 14–16 (15) mm. Nine males from Peninsular Siam and the Malay States (Johore to Trang): Wing, 80–86 (82.9); tail, 29–36.5 (33.4); culmen, 15–17.5 (16) mm.

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[41] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 176, 1923.

[42] Ibis, 1915, p. 740.

Just how far north the present form ranges in Peninsular Siam is not known at present, but it reaches Bandon. This would give it a range from the southern Malay States north to Bandon.

Besides the localities represented in Dr. Smith's and Dr. Abbott's collections, it has been recorded by Robinson [42a] from Koh Samui; by Robinson and Kloss [43] from Telok Poh and Pulo Panjang; by de Schauensee [44] from Nakon Sritamarat. I have not examined specimens from so far north in Peninsular Siam, and possibly these references may represent *Y. n. canicapillus* or are intermediates.

BLYTHIPICUS PYRRHOTIS PYRRHOTIS (Hodgson)

Picus pyrrhotis Hodgson, Journ. Asiat. Soc. Bengal, vol. 6, p. 108, 1837 (Nepal).

One male, summit of Doi Sutep, December 15, 1928; one immature male, Pang Meton (Doi Nangka), May 4, 1931; one immature male, Khun Tan, 4,000 feet, February 14, 1932; one male, Huey Me Lao, December 24, 1932; one female, Kao Pae Pan Nam, Lomsak, February 18, 1934.

The two immature males differ principally from the adult male in being dusky blackish below; they are of about adult size.

The range of this form is from Nepal to eastern Assam south to eastern Bengal, Burma, Tenasserim, western and northern Siam.

Gyldenstolpe [45] took it at Doi Par Sakeng; Chasen and Kloss [46] report it from the Raheng District. De Schauensee [47] collected three specimens at Chiengdao and states that it appears to be rare in northern Siam.

The male recorded by Chasen and Kloss from the Raheng District is now in the United States National Museum. It is smaller than the two males from northern Siam. Wing, 144; tail, 87; culmen, 42 mm. Two males from northern Siam measure: Wing, 151–157; tail, 82–91; culmen, 46–50 mm.

A small race, *Blythipicus pyrrhotis cameroni* Robinson, inhabits the Malay States and may extend into Peninsular Siam. *B. p. annamensis* Kinnear inhabits the mountains of southern Annan, Cochinchina, Laos, and Tonkin. *B. p. sinensis* (Rickett) inhabits southern China, and *B. p. hainanus* (Grant) is confined to Hainan. All the forms of the species seem to be mountain birds and for this reason are more or less localized.

[42a] Journ. Federated Malay States Mus., vol. 5, p. 147, 1915.

[43] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 101, 1919.

[44] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 250, 1934.

[45] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 93, 1916.

[46] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 170, 1928.

[47] Proc Acad. Nat Sci. Philadelphia, vol. 86, p. 251, 1934.

BLYTHIPICUS RUBIGINOSUS RUBIGINOSUS (Swainson)

Hemicircus rubiginosus SWAINSON, The natural history of the birds of western Africa, vol. 2, p. 150, 1837 (western Africa, in error; Malacca).

Four males and four females, Sichol, Bandon, August 28, 29, 1929, May 16–29, 1930; one female, Kao Soi Dao, Trang, January 22, 1934. Dr. Smith describes the soft parts as: Iris dull orange; bill greenish yellow; feet plumbeous.

Dr. W. L. Abbott collected nine males and one female, in Trang (Lay Song Hong, August 23–October 1, 1896; Kao Nom Plu, 1,000 feet, February 25, 1897; Kao Nok Ram, 2000 feet, January 14, 1899; Kao Soi Dao, 1,000 feet, February 12, 1899; Trang, February 5, 1897); one male, Endau River, east coast of Johore, June 22, 1901; one male, Rumpin River, Pahang, May 25, 1902. He gives the following notes: Iris dull or blood red; bill yellow, greenish at base; feet dull olive-brown.

Two of the above series (male and female) are immature. The male is slightly older than the female. The iris in the male is given as reddish brown and in the female as grayish brown; the feet in both as brownish black. The two specimens are approaching adult size and were collected at Lay Song Hong, Trang, August 23 (female) and September 28 (male).

Dr. Abbott states that it frequents dense jungle in the forest and generally keeps in small trees near the ground.

The form ranges from southern Tenasserim south through Peninsular Siam to the Malay States.

Robinson and Kloss [48] record it from as far north as Tasan, Chumporn. In Sumatra and Borneo a somewhat smaller form, *B. r. parvus* Chasen and Kloss, occurs.

MEIGLYPTES TRISTIS GRAMMITHORAX (Malherbe)

Phaiopicus grammithorax MALHERBE, Monographie des picidées . . ., vol. 2, p. 12, pl. 48, figs. 4, 5, 1862 (Malay Peninsula).

Three males, Bangnara, Patani, July 15, 16, 1926; one female, Kao Luang, Nakon Sritamarat, July 17, 1928; two females, Ban Kiriwong, Nakon Sritamarat, July 10, 1928; one female, Sichol, Bandon, September 5, 1929.

Dr. W. L. Abbott collected the following: Two males and six females, Trang (Prahmon, April 9, 13, 1896; Lay Song Hong, August 19 and September 8, 1896; Chong, January 22, 1897; Trang, January 29, 1987, March 3, 4, 1899); two males and one female, the Dindings, Straits of Malacca, April 15, 1900; one male and one female, Dungun River, Trengganu, September 22, 1900; one male, Tanjong Silantei, east coast Johore, July 26, 1901; two males and one female, Rumpin

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[48] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 178, 1923.

River, Pahang, June 2–11, 1902; one male and one female, Tenasserim (Tanjong Badak, January 7, 1900; Telok Besar, March 18, 1904). He gives the soft parts as: Iris dark red or dark brown; bill black; feet dirty greenish, leaden, greenish leaden, pale greenish, or dull olive, claws black.

A male (no. 308090) collected by Dr. Smith at Bangnara, Patani, July 15, has the throat barium yellow unbarred; the lores, a ring around the eyes, and a spot on each side of the nape are barium yellow; the barring on the jugulum is narrowly black on a white ground; the chest has a band of olive lake across it; the barring on the crown somewhat squamate; center of the breast mouse gray; the red malar stripe fully developed; otherwise, similar above to the adult, but the light markings lighter (very pale yellow) rather than buffy. I have seen no description of this plumage, but I think it must be an immature just acquiring the adult plumage. The bill is shorter than in the average adult.

In some adults, of either sex, the cheeks and chin become apricot yellow with narrow dusky barring; the center of the breast is strongly washed with kaiser brown; this plumage is uncommon and in the extensive series listed above of *grammithorax* there are only a pair. It probably occurs only in the old birds.

Specimens from the islands of Borneo and Sumatra average smaller than mainland birds and those from the island of Nias seem to agree with them. This form has been named *Meiglyptes tristis micropterus* Hesse, of which the range then would be: Borneo, Natuna Islands, Sumatra, and Nias. *M. grammithorax microterus* Oberholser is a synonym. *M. tristis tristis* (Horsfield) is confined to Java.

Ten males from the Malay Peninsula measure: Wing, 96–103 (98); tail, 43–48 (44.6); culmen, 17–20 (18.4) mm. Two males from Borneo and two from Sumatra: Wing, 84–97 (91.2); tail, 41–45 (43.2); culmen, 16–18 (17) mm. Six males from Nias: Wing, 89–94 (91.6); tail, 41.5–44 (42.8); culmen, 16–17.5 (16.9). One male from Tenasserim: Wing, 100; tail, 45; culmen, 19 mm. The females are only slightly smaller than the males and confirm the above, and so are not given.

M. t. grammithorax ranges from the Malay States north through Peninsular Siam to southern Tenasserim and southwestern Siam. It seems to be a common bird throughout the Peninsula.

MEIGLYPTES TUKKI BRUNNEUS (Eyton)

Hemicircus brunneus Eyton, Proc. Zool. Soc. London, 1839, p. 106 (Malaya; Malacca).

Two females, Bangnara, Patani, May 27, 1924, July 6, 1926; two females, Tha Lo, Bandon, September 20, 1931.

Dr. W. L. Abbott collected the following: one male, Lay Song Hong, Trang, September 20, 1896; one male and one female, Tanjong Dungun, Trengganu, September 20,1900; one female, Endau River, east coast of Johore, June 25, 1901; one male, Telok Besar, Tenasserim, March 1, 1904. He gives the colors of the soft parts as follows: Male (Trang)—iris dark brown; feet dull green; upper mandible black, lower leaden. A female from Johore—iris dark red; feet dirty leaden; a male from Tenasserim: iris deep red; feet brownish olive.

These differences are probably individual or age variations, not sexual.

Meiglyptes tukki tukki (Lesson), of Sumatra, Banka, Billiton, and possibly some other islands near the southeastern tip of Sumatra, seems to average darker and more heavily barred, both above and below, than the mainland form; it also averages slightly smaller.

Six males from the Malay Peninsula measure: Wing, 97–104 (100.8); tail, 58.5–65 (61.7); culmen, 22–25 (23.5) mm. Six males from Sumatra (3), Banka (1), and Billiton (2): Wing, 92.5–100 (97.3); tail, 57–64 (60.3); culmen, 21–24 (22.4) mm.

M. tukki brunneus ranges from the Malay States northward through Peninsular Siam to Southern Tenasserim.

Robinson and Kloss[49] report it from Tasan, Chumporn, and say that this is the most northerly record. De Schauensee[50] records it from Nakon Sritamarat.

MEIGLYPTES JUGULARIS Blyth

Meiglyptes jugularis Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 195, 1845 (Arracan).

One male, Doi Phra Chao, August 6, 1934; one female, Wangkien, Kanburi, March 13, 1934; one male and one female, Nakon Nayok, June 9 and 16, 1929; one male, Kao Pae Pan Nam, February 18, 1934; one female, Nong Mong, Muang Krabin, August 27, 1925; one female, Lamton Lang, June 2, 1934; one male and two females, near Krabin, May 3, 9, 1928; one male, Pak Chong, November 24, 1929; four males and one female, Hupbon, October 27–November 5, 1931; two males, Nong Khor, near Sriracha, November 13, 1924, September 26, 1925; one male, Klong Yai, Sriracha, July 25, 1932; two males, Ban Tarn Dam, March 5, 6, 1930; two males, Kao Sabap, October 24 and November 16, 1933. Dr. Smith also took a female at Ban Keng Sedok, French Laos, March 1, 1929, and a male at Doi Kao Lip, Salwin District, Burma, January 29, 1933. He gives the color of the soft parts as: Iris dark brown; bill black; legs dusky blue or dirty gray.

This species ranges from Arracan, Burma, eastward to Tenasserim, Siam, Cambodia, Laos, Cochinchina, and southern Annam.

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[49] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 180, 1923.

[50] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 251, 1934.

Gyldenstolpe [51] records it from Pak Koh, Khun Tan, and Bang Hue Pong, northern Siam; Chasen and Kloss [52] from the Raheng District; Lowe [53] from 28 miles east of Um Pang; Dr. Smith's series covers the remainder of its Siamese range.

MICROPTERNUS BRACHYURUS PHAEOCEPS Blyth

Micropternus phaeoceps Blyth, Proc. Asiat. Soc. Bengal, vol. 14, p. 195, 1845 (Arracan).

One female, Doi Nangka, November 16, 1930.

This is the only specimen of this woodpecker collected by Dr. Smith in northern Siam. It does not exactly agree with a specimen from the Raheng District identified as *burmanicus* by Chasen and Kloss [54] or with a specimen from Thayetmyo, Pegu, the type locality of that form. It is darker than the Raheng specimen above, with heavier dark bars; below it is much darker, the breast becoming dusky with darker subterminal bars and buffy edgings to the feathers; the feathers of the throat have much darker centers and are more widely edged with light buff. In the Raheng specimen the centers of the throat feathers are the same color as the chest and the edgings only slightly paler.

The Nangka specimen, compared with the one from Thayetmyo, has the upperparts more heavily barred; the centers of the throat feathers are much darker and the buffy margins broader; the feathers of the pileum in the Nangka bird have a dark-brown central stripe with lighter edgings, while in the Thayetmyo bird the pileum is a dusky brown without any lighter edging to the feathers.

The female from Doi Nangka measures: Wing, 132; tail, 67; culmen, 26 mm. The female from Raheng: Wing, 129.5; culmen, 26.5 mm.

This form apparently ranges from Tenasserim (except the extreme southern tip) north to the Shan States and eastward to western and northern Siam.

Deignan [55] reports it common at Chiengmai, and other collectors have found it not uncommon in northern Siam. De Schauensee [56] secured specimens at Chiengdao, Tung Sio, and Chiengmai. Gyldenstolpe [57] reports it from Den Chai and Pak Pan and on his second expedition [58] from Doi Par Sakeng and Khun Tan; Chasen and Kloss [59] listed it under the name *M. b. burmanicus* from the Raheng district.

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[51] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 94, 1916.

[52] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 171, 1928.

[53] Ibis, 1933, p. 478.

[54] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 171, 1928.

[55] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 157, 1931.

[56] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 251, 1934.

[57] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 48, 1913.

[58] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 94, 1916.

[59] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 171, 1928.

MICROPTERNUS BRACHYURUS WILLIAMSONI Kloss

Micropternus brachyurus williamsoni Kloss, Ibis, 1918, p. 107 (Koh Lak, southwestern Siam).

One female, Koh Lak, June 25, 1933; one female, Pran, April 3, 1931; one male, Knong Phra, April 16, 1929; one male and three females, Pak Chong, May 2, 1926, December 21, 22, 1926; one female, Chantuk, June 16, 1934; one male and one female, Pang Sok, August 14, 24, 1926; one male and one female, Tha Chang, March 19, 1927; one male, Nakon Panom, March 8, 1929; one male, Ban Den Muang, February 25, 1929; one female, Sakon Nakon, March 15, 1929; one male, Klong Yai, Sriracha, July 29, 1932; one male, Kao Sabab, November 8, 1933.

I am not sure that the specimens from eastern Siam, where the majority of birds in the above list come from, really belong to this form. They do not agree with the type, but they are nearer to it than to *phaeoceps*.

The series from eastern Siam is very variable; about two-fifths of the specimens have the backs unbarred and the barring on the wings much reduced; the throat in some specimens is the same color as the chest and the buffy edges to the feathers are much reduced, while in other specimens the centers of the throat feathers are much darker than the chest and the buffy edges to the feathers are broad and pronounced. The black barring on the belly is much reduced in the majority of the series. The type of *williamsoni* comes from an intermediate locality and the form is intermediate.

The male from Kao Sabap is quite different from the remainder of the series, and it is very doubtful if it belongs here, but I do not know where else to place it. The pileum is clove brown, unmarked; it is the only specimen in the series so marked, though the female from Sakon Nakon approaches it somewhat.

Eight males from central, eastern, and southwestern Siam measure: Wing, 124–131 (127); tail, 61–65 (63); culmen, 24.5–27.5 (25.9) mm.

The type of *williamsoni:* Wing, 117.5; tail, 61; culmen, 24 mm. One female from Koh Lak and one female from Pran: Wing, 125–128; tail, 59–63; culmen, 24.5–27.5 mm. Six females from eastern Siam: Wing, 120–129 (124.8); tail, 58–65 (62.2); culmen, 23–26.5 (24.6) mm.

If my views are correct, the range of *williamsoni* would be southwestern Siam through southern Siam to eastern and southeastern Siam.

Baker [60] records specimens from Meklong, Bangkok, and Samkok, central Siam. Herbert [61] reports finding two nests in the Bansakai gardens and describes the eggs but unfortunately does not give the dates.

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[60] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 424, 1919.

[61] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 323, 1926.

MICROPTERNUS BRACHYURUS SQUAMIGULARIS (Sundevall)

Picus squamigularis Sundevall, Conspectus avium picinarum, p. 89, 1866 (Malacca).

One male and two females, Bangnara, Patani, May 16, 27, 1924, July 4, 1926; one male and one female, Yala, Patani, February 1, 1931; one female, Pak Bhayoon, Patalung, July 11, 1929.

Dr. W. L. Abbott collected the following: Three males and three females in Trang (Prahmon, March 6–31, 1896; Tyching, April 24, 1896; Trang, January 1 and 21, 1899); one female, Kwala Endau, east coast of Johore, June 19, 1901; one male, Telok Besar, Tenasserim, March 18, 1904. He gives the soft parts as: Iris dark brown; bill black; feet dull leaden, claws dull black.

This is a small dark form with the throat dark brown or blackish, each feather edged with buffy, giving a squamate appearance to this region. It ranges from the Malay States to southern Tenasserim.

The female collected by Dr. Abbott at Telok Besar, Tenasserim, is dark like the Peninsular birds and agrees better with them than with the type of *M. b. williamsoni*, except in size; it is somewhat larger than Peninsular specimens.

Five males from Patani and Trang measure: Wing, 112–121.5 (116.9); tail, 55–64 (56.9); culmen, 21–24 (22.5) mm. One male from southern Tenasserim: Wing, 125; tail, 63; culmen, 24 mm.

Eight females (Johore to Patalung): Wing, 113–123 (117.4); tail, 52–60 (56.4); culmen, 21–24 (22.6) mm.

Robinson and Kloss [62] state that specimens from between Bandon and Victoria Point are intermediate between this form and *williamsoni*, but the only specimen examined by me from southern Tenasserim seems to be nearer *squamigularis* and it is convenient, in my opinion, to extend the range to there.

Robinson [63] records it from Ban Kok Klap, Bandon; Robinson and Kloss list it from Nongkok, Ghirbi,[64] and Kao Luang, 2,000 feet, Nakon Sritamarat[65]; de Schauensee [66] records four from Nakon Sritamarat as *M. b. williamsoni*, but his measurements are too small and his remarks do not agree with the average of the latter. South of Nakon Sritamarat, there are numerous records, probably because the country has been oftener visited by collectors.

A still smaller race, *M. b. badius* (Raffles), occurs in Sumatra, and there is a small dark race in Borneo, *M. b. badiosus* (Temminck). *M. b. brachyurus* (Vieillot) is confined to Java. There are other forms in Nias, India, Indo-China, and southeastern China.

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[62] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 182, 1923.

[63] Journ. Federated Malay States Mus., vol. 5, p. 95, 1915.

[64] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 102, 1919.

[65] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

[66] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 252, 1934.

DINOPIUM JAVANENSE JAVANENSE (Ljungh)

Picus javanensis Ljungh, Kongl. Vet.-Akad. Handl., vol. 17, p. 134, tab. 6, 1797 (Java).

Two males and three females, Bangnara, Patani, May 13, 18, 1924, July 3–16, 1926; one female, Bukit, Patani, January 26, 1931; one male and one female, Patalung, July 5, 9, 1929; one male and one female, Nakon Sritamarat, September 27 and October 1, 1926; one male, Ban Kiriwong, Nakon Sritamarat, July 9, 1928; one male, Ban Tha Yai, Nakon Sritamarat, July 9, 1928; one male, Kao Soi Dao, Trang, January 22, 1934; one female, Bandon, January 5, 1927; one female, Tha Lo, Bandon, September 24, 1931.

Dr. W. L. Abbott collected the following: Five males and three females in Trang (Prahmon, March 4–April 10, 1896; Tyching, May 29, 1896; Lay Song Hong, September 5, 1896; Trang, January 4, 1897; Kok Sai, December 29, 1898); one male, Singapore Island, May 18, 1899; one male and five females, Trengganu (Dungun River, September 18, 24, 1900; Tanjong Dungun, September 21, 22, 1900; Kemamun, October 2, 1900). He gives the soft parts as: Iris dark red or brown; feet greenish leaden, olive plumbeous, or leaden; bill black, leaden beneath at base.

Specimens from the Malay Peninsula do not seem to differ materially from those from western Java or Sumatra.

Three males from western Java measure: Wing, 132.5–133 (132.8); tail, 85–94 (88.7); culmen, 28–30.5 (29) mm. Five males from Sumatra and islands off eastern coast: Wing, 130–137 (133.8); tail, 78–89 (83.7); culmen, 28–30 (28.8) mm. Ten males from the Malay Peninsula (Singapore north to Bandon): Wing, 122–140 (134); tail, 83–93 (86); culmen, 26.5–30 (28) mm. One female from eastern Java: Wing, 136; tail, 86; culmen, 28 mm. One female from Sumatra (first) and one female from the Rhio Archipelago: Wing, 128–132.5; tail, 84.5–84; culmen, 28.5–28 mm. Ten females from Peninsular Siam: Wing, 130–139 (134.4); tail, 76.5–89 (84); culmen, 26.5–29 (27.2 mm).

The range of the form extends from western Java to some of the islands off the east coast of Sumatra, Sumatra, and the Malay Peninsula north to about latitude 10° N. Apparently it is a common form in the Malay Peninsula from Singapore to the Isthmus of Kra.

Another form, *D. j. exsul* (Hartert), is found in Bali and East Java, and a still smaller one, *D. j. borneensis* (Dubois), occurs in Borneo.

DINOPIUM JAVANENSE INTERMEDIUM (Blyth)

Picus (*Tiga*) *intermedius* Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 193, 1845 (Ramree Island, Araccan [67]).

One male and one female, Doi Phra Chao, August 2, 4, 1934; one male, Doi Angka, December 9, 1928; one female, Mehongsorn, January 6, 1933; one male, Chomtong, November 30, 1928; one male, Ban Nam Kien, Nan, April 21, 1930; one male, Tha Fang, January 17, 1933; one male and two females, Knong Phra, April 10, 12, 1929; one male, Ban Mekok, October 20, 1932; one female, Udon, February 16, 1929; two females, Lat Bua Kao, July 31, August 4, 1929; two males and one female, Pak Chong, May 5, 1925, May 4, 1926; one female, Chantuk, June 16, 1934; one female, Bua Yai, February 15, 1929; one female, Sakon Nakon, March 10, 1929; one male, Ban Den, February 25, 1929; one male, Tha Chang, March 16, 1927; one male and one female, Pang Sok, August 14, 18, 1926; one female, Sakeo, near Krabin, May 4, 1928; one female, Nong Mong, Krabin, August 30, 1925; one male and one female, Nong Khor, February 7, 1927; one female, Nontaburi, March 22, 1924; one female, Wang Kien, near Kanburi, March 13, 1934; one male, Muang Kanburi, September 11, 1928; one male, Bo Ploi, Kanburi, September 7, 1928; one male and one female, Koh Lak, June 24, 1933; one female, Sam Roi Yot, November 11, 1932. Dr. Smith took a female over the border at Ban Ong, Salwin River, Burma, January 13, 1933.

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[67] As restricted by Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 5, p. 197, 1923.

Dr. W. L. Abbott collected three females in Tenasserim (Victoria Point, January 3, 1900; Tanjong Badak, January 11, 1900; Champang, December 14, 1903).

This form is somewhat larger than *D. j. javanense.*

Ten males from Siam proper measure: Wing, 144–156.5 (149.9); tail, 88–111 (96.5); culmen, 30–36 (31.7) mm. Ten females: Wing, 140–151 (145.7); tail, 90–106 (96.9); culmen, 27–30 (28.8) mm.

The three females from Tenasserim are somewhat larger than Malay Peninsula specimens but somewhat smaller than females from farther north. In other words, they are intermediate but are nearer the northern form as a whole. The three females from Tenasserim measure: Wing, 140–142.5 (140.8); tail, 90–96.5 (92.7); culmen, 28.5–29.5 (29) mm.

The male and the female taken at Koh Lak, June 24, are both immature, about two-thirds grown, and resemble the adult male and female, respectively, except they are smaller.

The range of this form extends from southern Tenasserim and Peninsular Siam north of latitude 10° N. through Burma and Siam to Yunnan and eastward to Laos, Tonkin, Annam, and Cochinchina. In Siam proper it is evidently a common bird all over the country north of the Isthmus of Kra. Herbert reports taking a set of three eggs at Ban Khang, June 14.[68]

A somewhat smaller form, *D. j. rubropygialis* (Malherbe), occurs in western India.

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[68] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 325, 1926.

CHRYSOCOLAPTES STRICTUS GUTTACRISTATUS (Tickell)

Picus guttacristatus Tickell, Journ. Asiat. Soc. Bengal, vol. 2, p. 578, 1833 (Borabhum and Dholbhum).

Chrysocolaptes guttacristatus indo-malayicus Hesse, Orn. Monatsb., 1911, p. 182 (Puket, southwestern Siam).

One female, Doi Phra Chao, August 1, 1934; one male and one female, Mehongsorn, January 7, 8, 1933; one male, Ta Fang, January 17, 1933; one male and one female, Aranya, July 17, 1930; one female, Lomkao, February 20, 1934; one male, Konken, March 21, 1929; two females, Udon, March 18, 1929; one male, Pang Sok, August 23, 1926; one male, Sikeu, near Korat, February 16, 1926; one male and one female, Lam Klong Lang, near Pak Chong, June 7, 13, 1925; three females, Pak Chong, December 19, 1926, April 10 and December 4, 1929; one female, Kao Lem, December 29, 1930; two females, Hin Lap, September 28, 1932; one male and one female, Nong Mong, Krabin, August 24, 25, 1925; one female, Sakeo, near Krabin, May 5, 1928; two males, Nong Khor, near Sriracha, March 23 1926; February 5, 1927; one female, Ban Sadet, near Sriracha, May 26, 1925; one female, Huey Yang, near Sriracha, October 2, 1930; one male and one female, Ban Tarn Dam, near Sriracha, March 5, 7, 1930; one male, Nong Yang, east of Sriracha, October 20, 1931; one male, Lem Sing, Chantabun, June 10, 1926; one female, Kao Sabap, November 3, 1933; one male, Koh Chang, January 5, 1926; one male and two females, Kwe Noi, Kanburi, September 21, 1929; one male, Sam Roi Yot, November 13, 1932; one female, Sichol, Bandon, May 19, 1930; one female, Ban Kiriwong, Nakon Sritamarat, July 13, 1928; one male, Bangnara, Patani, July 7, 1926.

Dr. W. L. Abbott collected the following: Six males and three females in Trang (Telibon Island, February 25, 29, 1896; Prahmon, April 5, 1896; Tyching, June 29, 1896; Lay Song Hong, September 26, 1896; Trang, February 15, 1897, January 20, 1899); two females in Tenasserim (Tanjong Badak, January, 1900; Sungei Balik, February 26, 1904); one female, Domel Island, Mergui Archipelago, February 23, 1900. He gives the soft parts as: Iris orange, saffron yellow, pale brownish orange, or brownish yellow; bill horny black, or dull black, brownish at base of lower mandible; feet dull olive, leaden, or dull leaden in the male; the soft parts in the female do not differ.

There seem to be little or no color differences between specimens from the northern and eastern part of the country and those from Peninsular Siam. There is a gradual diminution in size from north to south, but it is not constant.

Four males from the Burma border (1) and northern Siam (3) measure: Wing, 167–175 (170.4); culmen, 47.5–53 (50.6) mm. Five males from eastern Siam: Wing, 156–170 (165.7); culmen, 45–51.5 (48.8) mm. Nine males from southeastern Siam: Wing, 156–170

(163.4); culmen, 41.5–50 (47.3) mm. Nine males from southwestern (2) and Peninsular Siam: Wing, 152.5–168 (161.2); culmen, 44–50.5 (47.9) mm.

Three females from northern Siam measure: Wing, 163.5–176 (168.2); culmen, 47–49 (47.8) mm. Nine females from eastern Siam: Wing, 161.5–173 (166.9); culmen, 42.5–47 (45.3) mm. Six females from southeastern Siam: Wing, 160–167 (163.5); culmen, 41–48 (45.7) mm. Nine females from southwestern Siam (2), southern Tenasserim (3), and Peninsular Siam (4): Wing 160–175 (164.7); culmen, 43–49 (46.8) mm.

It seems inexpedient to recognize more than one form for the whole of Siam. I am following Robinson and Kloss [69] in this respect. The range would, then, be eastern Bengal, Assam, Araccan, the whole of Burma, and Siam, eastward to Cambodia, Laos, Cochinchina, and Annam, and southward in Peninsular Siam to Patani.

In Siam it evidently is a common bird all over the country. Robinson [70] records it from Pulo Langkawi, Pulo Terutau, Chong (Trang), and Koh Samui; he also gives it for Koh Chang, Koh Klum, and Koh Rang.[71] It probably occurs on other islands off the coast.

While the form shows little geographical differentiation, it has considerable individual variation. A male (no. 332811) from Mehongsorn, January 7, has the breast with the black reduced on the sides of the feathers and none on the tip. Another male (no. 332809) has the black markings on the head and lowerparts verona brown. A female (no. 172996) has the inner primaries and secondaries orange citrine instead of golden-orange. This seems to be a matter of age and indicates a bird not quite adult. There are several immature specimens in the series, but none very young. The subadult resembles its sex; except in the male the red occurs only on the nape. The forehead and crown are black and spotted as in the female; both sexes in this stage have the back washed with scarlet red.

There is one peculiarity in the series that is new to me. Many of the specimens taken in the summer have the rhampotheca at the base of the upper mandible flaking off, evidently being shed or molted.

A smaller race, *C. s. chersonesus* Kloss, inhabits Johore, Singapore, Rhio Archipelago, and Sumatra. Of this form I have examined only an apparently adult female from Sumatra. Besides being smaller than *guttacristatus*, the mantle and wing coverts are strongly washed with scarlet. *C. s. strictus* (Horsfield) is confined to Java. Several other races occur in India.

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[69] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 196, 1923.

[70] Journ. Federated Malay States Mus., vol. 7, p. 161, 1917.

[71] Ibis, 1915, p. 739.

CHRYSOCOLAPTES VALIDUS XANTHOPYGIUS Finsch

Chrysocolaptes xanthopygius Finsch, Notes Leyden Mus., vol. 26, p. 34, 1905 (upper Mahakan River, Dutch Borneo).

One male, Kao Luang, Nakon Sritamarat, July 13, 1928; one male and three females, Kao Chong, Trang, August 27–31, 1933; one female, Kao Soi Dao, Trang, December 29, 1933.

Dr. W. L. Abbott collected three males and one female at Lay Song Hong, Trang, November 10–11, 1896, January 1, 1897, and one male and one female at Tanjong Peniabong, east cost of Johore, July 23–24, 1901.

He gives the soft parts as: Iris orange-red, reddish brown, or brownish yellow; upper mandible dark horn brown, lower mandible yellow; feet pale yellow brown (males); iris orange brown or brown; upper mandible dark horn brown or pale horn brown, lower mandible yellowish or greenish white; feet leaden or dusky greenish (females).

In most of the above series the males have the center of the mantle white with a slight yellow wash; the rump cadmium orange. In one male from Trang (no. 160191) the rump is cadmium orange stained with scarlet red and one or two other males show a slight red wash on the rump.

The few specimens examined from Sumatra and Borneo do not seem to differ materially from the mainland form.

Six males from the Malay Peninsula measure: Wing, 157–166 (159.8); tail, 79.5–86.5 (82.5); culmen, 43–49 (45.4) mm. Four males from Sumatra (2), Banka (1), and Borneo (1); Wing, 163–165 (163.9); tail, 81–90 (85.5); culmen, 43–46 (44.9) mm. Six females from the Malay Peninsula: Wing, 154–165 (159.2); tail, 77–91 (83.5); culmen, 40–44.5 (42.2) mm. Four females from Sumatra (2) and Borneo (2): Wing, 150–162.5 (154.9); tail, 78–88 (84); culmen, 39–43 (40.7) mm.

The form ranges from Borneo, Banka, and Sumatra to the Malay States and Peninsular Siam. Robinson and Kloss [72] state that a male from Lamra, a female from Koh Khau, a male from Chong, and a pair from Kao Ram were the sole records for Siam when they wrote.

C. v. validus (Temminck) is confined to Java and is quite distinct from *xanthopygius*. The mainland, Sumatran, and Bornean form should doubtless be recognized as a distinct species. The only specimen I have examined from Java, a female, has the back and rump clay color instead of white or yellowish white and seems to be adult.

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[72] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 197, 1923.

HEMICIRCUS CONCRETUS SORDIDUS (Eyton)

Dendropicus sordidus Eyton, Ann. Mag. Nat. Hist., ser. 1, vol. 16, p. 299, 1845 (Malacca).

One immature male and one immature female, Waterfall, Trang, August 26, 1933; one immature female, Patalung, July 7, 1929.

Dr. W. L. Abbott collected an adult male at Lay Song Hong, Trang, January 1, 1897, and a male and female, on Singapore Island, May 12, 1899. He gives the color of the soft parts in the male from Singapore as: Iris pale brownish pink; bill dull leaden, paler beneath; feet olive leaden.

The pair from Singapore has the lower parts suffused with yellowish citrine, and there is a slight wash of reddish on the breast; the adult male collected by Dr. Abbott in Trang largely lacks the yellowish-citrine suffusion and so looks quite different.

The immature male collected by Dr. Smith in Trang has the crest and pileum ochraceous-tawny, barred narrowly with slate color; the breast is grayer than in the adult and is spotted lightly with warm buff spots. The immature female collected by Dr. Smith in Patalung has the whole head and lowerparts deep gull gray; the edgings of the feathers of the back and wing coverts and the rump are almost pure white; the crest is small. The second immature female taken by Dr. Smith at the Waterfall, Trang, August 26, 1933, is darker and has a light yellowish wash to the breast, back, and rump; the crest is short. In neither of these two immature females is the crown or crest buff or tipped with crimson as described by Stuart Baker [73]; only the immature male has the crest ochraceous-tawny, but without any crimson tips. The crimson tip appears only as the immature approaches maturity.

The few specimens from Borneo examined seem to be darker than Malay Peninsula birds. The only adult examined from Sumatra is a female; it is dark like Bornean specimens. The wings of two males from the Malay Peninsula measure 82–85 mm; three from Borneo: 81–86 (82.8) mm.

If the Sumatran and Bornean birds are the same, the name for them will be *Hemicircus concretus coccometopus* Reichenbach. This would leave the range of *H. c. sordidus* as follows: The Malay States northward through Peninsular Siam to southern Tenasserim.

Robinson and Kloss [74] report it rather scarce but widely distributed in the Malay Peninsula. They later recorded it from Kao Ram, 1,200 feet, Nakon Sritamarat.[75]

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[73] The fauna of British India, Birds, ed. 2, vol. 4, p. 83, 1927.

[74] Ibis, 1911, p. 47.

[75] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

HEMICIRCUS CANENTE CANENTE (Lesson)

Picus canente Lesson, Centurie zoologique . . ., p. 215, pl. 73, 1830 (Pegu).

One male and two females, Koh Chang, April 5, 1924, March 10, 1930; one male and two females, Pak Chong, December 20, 1926, November 24, 1929; one female, Aranya, July 16, 1930; one male and one female, Kwe Noi, Kanburi, September 24, 1929; one female, Pran, April 2, 1931.

Dr. W. L. Abbott collected a female at Bok Pyin, Tenasserim, February 13, 1900.

The females as a rule are darker below than the males, and their foreheads and crowns are buffy white. The immature is even darker below than the female.

This form ranges from Assam south of the Brahmaputra through Burma to southern Tenasserim, northern Peninsular Siam, north to northern Siam and eastward to Laos, Cochinchina, and Annam. Gyldenstolpe,[76] records it from Ban Hue Hom and Pak Pan and later [77] from Chum Poo and Pak Koh. De Schauensee secured specimens from Nakon Nayok and Chieng Sen,[78] and later from Chantabun and Kon Ken.[79] Robinson and Kloss [80] record it from Tapli, Pakchan Estuary, which is about the limit of its range in this direction. Chasen and Kloss [81] list a male from the Raheng district. Lowe [82] met with it 28 miles east of Umpang and 28 miles southwest of Kempempet and says it is a scarce bird and generally seen in pairs on some dead tree.

H. c. cordatus Jerdon is confined to the Malabar coast and Travancore.

MULLERIPICUS PULVERULENTUS PULVERULENTUS (Temminck)

Picus pulverulentus Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 66, pl. 389, 1826 (Java and Sumatra; type locality fixed by Stresemann as Java).

One male, Kao Soi Dao, Trang, January 9, 1934; one male, Huey Yang, Kao Luang, Nakon Sritamarat, October 10, 1930; one male, Bandon, January 8, 1927; two males, Tha Lo, Bandon, September 14, 23, 1931.

Dr. W. L. Abbott collected three males and three females in Trang (Prahmon, March 3 and April 14, 1896, and Lay Song Hong, August 25 and October 2, 1896); one immature male, Singapore Island, May 31, 1899; one female, Endau River, east coast of Johore, June 28, 1901; two males and one female, in Tenasserim (Sungei Balik, December

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[76] Kungl. Svenska Vet-Akad. Handl., vol. 50, no. 8, p. 50, 1913.

[77] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 96, 1916.

[78] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 567, 1930.

[79] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 252, 1934.

[80] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 198, 1923.

[81] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 171, 1928.

[82] Ibis, 1933, p. 475.

3, 1900; Victoria Point, December 5, 1900). He gives the soft parts as: Iris blackish brown or dark brown; bill bluish white, black at tip and along culmen, becoming horny blue at base; feet dull leaden blue.

The above series from the Malay Peninsula is considerably darker than the series from the northern and eastern part of Siam; they also average a little smaller. The three specimens from southern Tenasserim are somewhat lighter than birds from farther south but darker than northern individuals as a rule. In fact, they are intermediate; on the whole, they go better with Peninsular specimens.

I have examined no specimen from Java, but specimens from Peninsular Siam and farther south clearly do not belong to the northern form and are placed with the Javan form provisionally until specimens from there can be examined. A male from Pulo Bauwal, southwestern Borneo, does not seem to differ materially from Peninsular birds. Two males and a female from Dutch East Borneo are very dark, darker than anything from the mainland. Though one male was taken February 24 and the other two specimens on November 6, all three specimens are molting, and I think they are birds of the previous breeding season, but the bird of the year of the northern form, *harterti*, is brownish not blackish. If more ample material demonstrates that these differences hold for the Bornean bird, it would take Bonaparte's name *Hemilophus mülleri*.

A male and two females from the Philippines are browner below; the females are from Palawan, but the island is not specified on the male, probably Palawan also.

With Borneo and Palawan left out of the range as doubtful, the range of *Mulleripicus pulverulentus pulrerulentus* would be Java and the Malay Peninsula north to southern Tenasserim, possibly Sumatra. Robinson and Kloss[83] record it from Pulo Langkawi and Pulo Terutau; Robinson adds Pulo Lontar[84] and Bankok Klap, Bandon.[85] Apparently it is not a common bird or else it is wary and difficult to obtain.

MULLERIPICUS PULVERULENTUS HARTERTI Hesse

Mulleripicus pulverulentus harterti Hesse, Orn. Monatsb., 1911, p. 182 (Assam, Burma to Tenasserim; type from Pya, Upper Chindwin).

One male, Doi Phra Chao, August 2, 1934; one female, Mekhan, February 7, 1932; one male and one female, Sikeu, near Korat, March 4, 1926; one male, Pak Chong, December 2, 1929; one female, Knong Phra, near Pak Chong, February 25, 1924; one male and one female, Lamton Lang, June 1, 1934; one male, Ban Nong Keng, February 27, 1929; one male, Nong Khor, near Sriracha, February 9, 1929; one female, Ban Tarn Dam, near Sriracha, March 3, 1930.

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[83] Ibis, 1911, p. 47.

[84] Journ. Federated Malay States Mus., vol. 7, p. 163, 1917.

[85] Journ. Federated Malay States Mus., vol. 5, p. 95, 1915.

The above series is lighter and averages larger than a good series from Peninsular Siam.

Five males from eastern Siam measure: Wing, 235–250 (241.6); tail, 139–162 (153.8); culmen, 62–67.5 (64.5) mm. Five females from northern and eastern Siam: Wing, 235–242 (238.2); tail, 150–159 (154); culmen, 58–66 (62.3) mm.

The form ranges from Oudh, Assam, Burma, and northern Tenasserim to Siam proper, Laos, Cambodia, Cochinchina, and Annam.

I am somewhat doubtful of the Indo-China records; the only specimen examined in good plumage is a male from Trang Bom, Cochinchina (no. 278359). It is a summer-taken specimen, slightly worn, and is somewhat darker and a little smaller than this sex in the Siamese series. It measures: Wing, 234; tail, 148; culmen, 57.5 mm. On geographic grounds it is placed with the northern form for the present.

The bird of the year is lighter than adult specimens and has a rusty wash to the plumage, which is retained until after it reaches adult size.

The form occurs sparingly all over Siam proper. It has been recorded from Hat Sanuk, Rajburi, by Robinson and Kloss.[86] This must be near the limit of its range in this direction.

MACROPICUS JAVENSIS JAVENSIS (Horsfield)

Picus javensis Horsfield, Trans. Linn. Soc. London, vol. 13, p. 175, 1821 (Java).

One male, Kao Soi Dao, Trang, January 6, 1934; one female, Tha Lo, Bandon, September 23, 1931.

The following were collected by Dr. W. L. Abbott: Four males and three females in Trang (Prahmon, April 7, 1896; Lay Song Hong, August 20–November 23, 1896; Trang, January 28, 1899); one male, Kemamun, Trengganu, October 2, 1900; and one female, Endau River, Pahang side, June 21, 1901. He gives the soft parts as: Iris yellow, pale yellow, pale greenish yellow; bill black, black with white at tip beneath, or black, grayish beneath; feet leaden, dull leaden, dirty leaden, or leaden blue; claws dark brown; dark horn blue, or blackish leaden.

This form ranges from Java, Borneo, the Rhio Archipelago, Banka, and Sumatra to the Malay States and north through Peninsular Siam to southern Tenasserim.

No specimens from Java have been available for comparison. Birds from the Philippines appear to be smaller and break up into a number of races. A large race, *Macropicus javensis buttikoferi* Richmond, is found on Nias and a much smaller form, *M. j. parvus* Richmond, on Simalur.

The few specimens examined by me from Borneo seem to have the throat and cheeks on the average more heavily streaked with white than the mainland form. In this respect, they resemble the southern Philippine form, *Macropicus javensis suluensis* (Blasius), but are large like the mainland form.

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[86] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 198, 1923.

Five males from the Malay Peninsula measure: Wing, 223–240 (230.6); tail, 155–161 (159.2); culmen, 54–58 (56.4) mm. Three males from Borneo: Wing, 234–238 (235.7); tail, 166–182 (171.5); culmen, 56.5–61 (58.7) mm. One male from Linga Island, Rhio Archipelago: Wing, 222; tail, 160; culmen, 53 mm. Five males from the Malay Peninsula: Wing, 216–226 (220.2); tail, 140–160 (153.6); culmen, 50–54 (51.8) mm. Two females from Borneo: Wing, 224–230; tail, 153.5–165; culmen, 54–55 mm. One female from Sumatra: Wing, 237; tail, 182; culmen, 54 mm. Two females from Banka: Wing, 219–230; tail, 165–166; culmen, 51–52 mm.

This form appears to be not uncommon in the south of the Peninsula, becoming rarer to the northward. The northernmost record I have seen is the one of Müller [87] for Salanga (Puket), but Dr. Smith took it in Bandon and Davison secured specimens in extreme southern Tenasserim.

MACROPICUS FEDDENI (Blanford)

Mulleripicus feddeni Blanford, Journ. Asiat. Soc. Bengal, vol. 32, p. 75, 1863 (Burma).

One female, Doi Angka, December 9, 1928; one female, Ban Nam Kien, Nan, April 18, 1930; three males and two females, Pak Chong, April 28 and December 18, 22, 1926; one male, Sakeo, near Krabin, May 4, 1928; one male, Chantuk, June 12, 1934; one male, Kwe Noi, Kanburi, September 22, 1929; one male, Wang Kien, Kanburi, March 12, 1934. Dr. Smith also took a female at Ban Tung Kwa Tao, Salwin River, Burma, January 12, 1933.

In my opinion this bird is a species and not a form of *M. javensis*. It is readily distinguished from *javensis* or any of its forms by the broad white rump. As a rule, the throat and posterior cheeks are more heavily streaked with white, and the breast is purer white.

Macropicus feddeni ranges from the Chin and Kachin Hills and the northern Shan States, Burma, to northern Tenasserim and practically all Siam proper east to Cambodia, Cochinchina, and southern Annam. In Siam it has been recorded by Robinson and Kloss [88] from Koh Lak in southwestern Siam, which seems to be about the southern limit in this direction. De Schauensee,[89] in recording it from Metang and Bua Yai, states that it is uncommon in dry and evergreen forests.

A pair in the United States National Museum from Dalat, southern Annam, are somewhat smaller than Siamese specimens. Robinson and Kloss have also called attention to this.

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[87] Die Ornis der Insel Salanga, p. 72, 1882.

[88] Journ. Nat. Hist. Siam, vol. 5, p. 199, 1923.

[89] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 253, 1934.

From descriptions it seems rather likely this is a form of *Macropicus hodgsonii* (Jerdon) from the west coast of southern India, but the ranges are widely separated. *Macropicus forresti* (Rothschild) closely resembles *feddeni* but is larger and lacks almost entirely the white streaks on the throat and posterior auriculars; it is found in the high mountains of Yunnan and Tonkin.

Stuart Baker [90] alters *feddeni* to *crawfurdi* on the grounds of priority, but *Picus crawfurdi* Gray was given [91] to an Indian drawing brought to England by Mr. Crawfurd, Jr. Hargitt [92] claims that the name cannot possibly apply to *feddeni*.

VIVIA INNOMINATA MALAYORUM (Hartert)

Picumnus innominatus malayorum HARTERT, Die Vögel der paläarktischen Fauna, Band 2, Heft 1, p. 937, 1912 (Gunong Ijau, Perak).

One male, Doi Nangka, November 20, 1930; one male, Doi Hua Mot, August 24, 1934.

This form is said to differ principally from *V. i. innominata* in being only a little smaller. The wings of two males from Cachar, India, measure 54 mm, the wing of the Nangka male 53 mm, that from Doi Hua Mot 56.5 mm; so even size does not seem to hold. In the two Siamese males the spots below come farther down on the breast and the barring on the sides is less pronounced than in the Cachar males. The northern Siamese specimens are probably intermediate, as the differences are slight. I have seen no specimens from the Malay Peninsula.

Gyldenstolpe [93] records it from Khun Tan. Deignan [94] states that it is rather common on Doi Sutep from 2,700–3,500 feet. De Schauensee [95] secured it at the same place and at Chieng Dao. There seems to be no definite record for Peninsular Siam, where it must occur, however, as it occurs in the Malay States.

The form ranges from eastern Burma and Siam southeast to Tonkin and southern Annam and south to the Malay States, Sumatra, and Borneo.

SASIA OCHRACEA REICHENOWI Hesse

Sasia ochracea reichenowi HESSE, Orn. Monatsb., 1911, p. 181 (Burma).

One male, Chiengdao, January 29, 1932; one male, Aranya, July 19, 1930; one female, Tha Chang, March 20, 1927; one female, Lat Bua Kao, August 9, 1929.

Dr. W. L. Abbott collected a male and a female at Maliwun, Tenasserim, March 22, 1900.

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[90] The fauna of British India, Birds, ed. 2, vol. 7, p. 319, 1930.

[91] Griffith, The animal kingdom . . . by the Baron Cuvier . . . , Birds, vol. 2, p. 513, fig., 1829

[92] Catalogue of the birds in the British Museum, vol. 18, p. 501, 1890.

[93] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 97, 1916.

[94] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 158, 1931.

[95] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 253, 1934.

No specimens of the other forms of this species have been available for comparison.

Gyldenstolpe [96] took a male at Doi Par Sakeng; Deignan [97] came across it only once in July at Chiengmai; de Schauensee [98] secured specimens at Chieng Rai and Chieng Sen and on his third expedition at Tamuang; [99] Robinson and Kloss [1] record it from Mamoh and Tapli, Pakchan Estuary, and Tasan, Chumporn. Apparently, then, it occurs nearly all over Siam proper and extreme northern Peninsular Siam.

The form ranges from the Lower Chindwin and southern Shan States in Burma south to Southern Tenasserim and east through Siam to Laos, Tonkin, and northern Annam.

SASIA ABNORMIS EVERETTI Hargitt

Sasia everetti HARGITT, Catalogue of the birds in the British Museum, vol. 18, p. 559, pl. 15, juv., 1890 (Lumbidan, Borneo).

One male, Bukit, Patani, January 24, 1931; one female, Yala, Patani, February 2, 1931; one female, Kao Luang, Nakon Sritamarat, 3,000 feet, July 14, 1928; one female, Kao Soi Dao, Trang, January 12, 1934; one female, Kao Chong, Trang, September 2, 1933.

Dr. W. L. Abbott collected two adult males and one immature female in Trang (Kao Soi Dao, February 10, 1899; Prahmon, March 6, 1896; Tyching, July 3, 1896). He describes the soft parts as: Iris red; orbital skin livid purple; upper mandible black, lower mandible greenish yellow; feet brownish yellow or orange, claws pale brownish horn.

The only difference between the sexes seems to be that in the male the feathers of the forehead are tipped with light cadmium yellow, while in the female they are kaiser brown. Apparently there is little or no difference in size.

The immature female collected by Dr. Abbott at Tyching, Trang, July 3, is similar to the plate of the type of *Sasia everetti*, quoted above, except the pileum and upper back are a little deeper than hair brown, with little or no olive wash; only the ear coverts and a narrow line above the eye posteriorly are orange-cinnamon, and the lores are blackish.

There appears to be no difference in color or size between specimens from the Malay Peninsula, Borneo, and Sumatra. Three males from Peninsular Siam measure: Wing, 52–55 (53.3); tail, 19–22 (20.7); culmen, 12–13 (12.7) mm. Five males from Borneo and one from Sumatra: Wing, 49–53 (51.9); tail, 20–23.5 (21);

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[96] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 97, 1916.

[97] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 158, 1931.

[98] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 568, 1930.

[99] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 253, 1934.

[1] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 200, 1923.

culmen, 12–13 (12.6) mm. Three females from Peninsular Siam: Wing, 51–54 (52.7); tail, 19–22 (20.7); culmen, 12.5–13 (12.7) mm. One female from Borneo: Wing, 51.5; tail, 21; culmen, 13 mm.

No specimens from Java have been examined, but de Schauensee [2] claims that Peninsular birds have larger bills. He had only one specimen from Java, one from the Peninsula, and three from Borneo. He is correct in stating that Bornean and Peninsular birds are the same, and presumably he is correct as to the Javan form also. A larger series from Java should be examined, however.

The range of this form extends from Borneo and Sumatra to the Malay States and northward through Peninsular Siam to Maprit, southwestern Siam, and southern Tenasserim.

This bird is probably not uncommon, but as it mostly inhabits bamboo thickets it is probably hard to observe, and it is not common in collections. It has been taken the full length of the Peninsula.

Sasia abnormis abnormis (Temminck) is confined to Java.

JYNX TORQUILLA JAPONICA Bonaparte

Junx japonica BONAPARTE, Conspectus generum avium, vol. 1, p. 112, 1850 (Japan).

One female, Bung Borapet, March 29, 1933.

This form ranges from Japan west to central Asia and south to northern India. In winter it migrates to southern China, Tonkin, Annam, Cochinchina, Siam, Burma, and the greater part of eastern India.

Several nominal races have been proposed for *J. torquilla* in recent years:

Iynx torquilla chinensis Hesse, Orn. Monatsb., 1911, p. 181 (Tsintau, China).

Jynx torquilla harterti Poljakow, Mess. Orn., 1915, p. 135, 136 (Altai, Jenissei Government).

Jynx torquilla pallidior Rensch, Abh. Ber. Zool. Mus. Dresden, vol. 16, no. 2, p. 40, 1924 (Sungpan, Szechwan).

Jynx torquilla intermedia Stegmann, Bull. Brit. Orn. Club, vol. 47, p. 73, 1927 (Tchita, southeastern Siberia).

Adequate material is not available to investigate the validity of these forms at present, but I do not believe they can be maintained. It is too difficult to discriminate the eastern from the western form without complicating matters any further.

This bird is a rather rare winter visitor to Siam. Williamson [3] recorded a male from Bangkok, April 24, 1916. De Schauensee [4] lists a female from Chiengmai, January 5; Deignan [5] records it from

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[2] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 253, 1934.

[3] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 324, 1917.

[4] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 568, 1930.

[5] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 8, p. 158, 1931.

Chiengmai from October to March and states that in February and March 1931 it was almost abundant; Gyldenstolpe [6] adds the locality Khun Tan.

Family EURYLAIMIDAE: Broadbills

EURYLAIMUS JAVANICUS PALLIDUS Chasen

Eurylaimus javanicus pallidus Chasen, Bull. Raffles Mus., no. 10, p. 43, 1935 (Kao Nawng, Bandon, Siam).

One female, Pang Sok, August 24, 1926; three males and one female, Pak Chong, March 3, 1927, June 21, 22, 1934; two males, Hin Lap, December 7, 12, 1931; one male, Hupbon, November 8, 1931; one male and two females, Nong Khor, near Sriracha, September 25, 1925, February 10, 1927; one male, Ban Sadet, Sriracha, June 1, 1925; three males, Klong Yai, Sriracha, July 22, 25, 1932; one immature male, Kao Bantad, Krat, December 29, 1929; two males and one female, Kao Sabap, 3,000 feet, October 30–November 17, 1933; one male, Kao Soi Dao, Trang, January 29, 1934.

Dr. W. L. Abbott collected one adult male, one adult female, and one immature female, Lay Song Hong, Trang, September 2, 6, 1896. He describes the soft parts as: Bill bright blue, distal half of upper mandible pale yellowish green, tip and a line along commissure on both mandibles black; iris blue; feet pale purplish fleshy.

The immature female was taken September 2. It is about adult size and has just started to acquire the adult plumage. Above it resembles the adult, but the back is a brownish black and the yellow spots are lighter; the pileum is snuff brown, darker on the nape, with very fine light shaft streaks and a vinous tinge in certain lights; the lower parts are barium yellow, with dusky edges to the feathers of the chest and sides. On the sides of the neck and the center of the chest and belly the vinous plumage of the adult is being assumed.

The above large series from Siam compared with three males from eastern Sumatra are paler below, especially the under tail coverts. The most striking difference, however, is in the color of the throat above the black jugular band; in all the Siamese specimens this region has a dull Indian purple sheen, while in the Sumatran males it is lacking or much reduced. Above, the Siamese series averages darker on the pileum; this difference might not hold in a larger series from Sumatra.

Apparently there is little or no difference in size between the two series. Ten males from Siam measure: Wing, 102–111 (107.3); tail, 58–67.5 (63.9); culmen, 23.5–25.5 (24.5) mm. Three males from eastern Sumatra: Wing, 105–109.5 (107.5); tail, 58.5–64 (61.2); culmen, 24–25.5 (24.8) mm.

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[6] Ibis, 1920, p. 606.

Count Gyldenstolpe[7] has recorded it from Khun Tan and Pa Hing in the north; Lowe[8] lists it from Mewong River, 40 miles west of Um Pang, western Siam; Robinson and Kloss[9] from Kao Luang, 2,000 feet, Nakon Sritamarat.

All Dr. Smith's specimens recorded above, except the one from Trang, come from eastern and southeastern Siam. It is apparently rare in the northern part of its range.

The range of the form is from east, central, and south Burma to the whole of Siam, Laos, Cochinchina, southern Annam, and south through Peninsular Siam to the Malay States.

E. j. javanicus Horsfield, of which no specimens have been available for examination, is confined to western and middle Java; *E. j. harterti* Van Oort to Sumatra and the Rhio Archipelago; *E. j. brookei* Robinson and Kloss to Borneo; and *E. j. billitonis* Kloss to Billiton Island.

EURYLAIMUS OCHROMALUS OCHROMALUS Raffles

Eurylaimus ochromalus RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 295, 1822 (forests of Singapore and interior of Sumatra).

One male and one female, Sichol, Bandon, August 30 and September 1, 1929; two males and two females, Kao Soi Dao, Trang, January 16, 1934.

Dr. W. L. Abbott collected two males and two females, Lay Song Hong, Trang, September 3 and 21, 1896; one male and one female, Victoria Point, Tenasserim, March 29, 1904. He describes the soft parts as: Bill blue at base and middle of lower mandible; sides of the lower and distal two-thirds of the upper pale green; tip and a line along the commissure black; feet pinkish fleshy; iris bright yellow.

Robinson and Kloss[10] report it from Tapli, Pakchan Estuary, and Tasan, Chumporn, Peninsular Siam, and say these are the most northerly recorded for Siam, but in Tenasserim the form reaches its northern limits at Yea, in about latitude 15° N.

The form ranges from southern Tenasserim south through Peninsular Siam to the Malay States, Sumatra, Banka, and the Natuna Islands.

E. o. mecistus Oberholser, a somewhat larger form, occurs on Pulo Tuanku, Banjak Islands, off the western coast of Sumatra; *E. o. kalamantan* Robinson and Kloss in Borneo.

CORYDON SUMATRANUS LAOENSIS de Schauensee

Corydon sumatranus laoensis DE SCHAUENSEE, Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 555, 1929 (Chiengmai, northern Siam).

One male, Doi Angka, 2,000 feet, December 8, 1928; one male, Khun Tan, October 24, 1929; one female, Huey Salob, January 2,

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[7] Ibis, 1920, p. 581.

[8] Ibis, 1933, p. 282.

[9] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

[10] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 203, 1923.

1933; two males and three females, Ta Fang, January 17, 1933; two males and one female, Hupbon, November 1, 2, 1931; two males, Huey Yang, Sriracha, August 6, 1932; one male and one female, Nong Yang, near Sriracha, October 24 and November 16, 1931; one male and two females, Kao Seming, Krat, October 17, 1928; two females, Kao Sabap, November 20, 1933; one male and one female, Sichol, Bandon, September 3, 1929, and May 29, 1930; two males and two females, Tha Lo, Bandon, September 16 and 28, 1931; one male, Kao Luang, Nakon Sritamarat, July 17, 1928.

Dr. W. L. Abbott collected six males and three females, Trang (Prahmon, April 8, 1896; Tyching, July 21, 1896; Lay Song Hong, August 24–December 5, 1896, and January 1, 1897; near Kao Nom Plu, February 27, 1897; Kao Soi Dao, 2,000 feet, February 11, 1899); one female, Endau River, east coast of Johore, June 30, 1901. Dr. Abbott gives the colors of the soft parts as: Iris dark brown; feet black; orbital skin dull red; bill dull red, fleshy white at base, horny blue at tip.

De Schauensee originally described this bird from three specimens with white or very nearly white throats. The United States National Museum has a female from Tenasserim and a male from Raheng, Siam, in similar plumage. Later these were thought to be individual variations, and they probably are; nevertheless on his last expedition de Schauensee [11] secured additional material, and while no more were secured like the type series, he found upon comparison with Sumatran specimens that the northern Siamese bird is separable by its paler throat, deeper black plumage, both above and below, and its dusky chin and upper throat. The series collected by Dr. Smith confirms this. The specimens secured by Dr. Abbott in Trang are intermediate but nearer the northern race and for the present are placed with it. The Trang birds are blacker than a series from Sumatra; the throats average considerably lighter but are darker than northern Siamese specimens. The female from Johore resembles Trang specimens. Two specimens from Daban, southern Annam, are like the northern Siamese skins.

Two immature males taken by Dr. Smith at Huey Yang, Sriracha, August 6, have the throat and chest dusky, only a few pale yellowish feathers appearing on the upper throat. The apparently adult birds with white or nearly white throats may be birds in their first adult plumage.

The form ranges from northern Siam to Tenasserim and down Peninsular Siam to the Malay States, east to Laos, Cochinchina, and northern and southern Annam. It occurs nearly all over Siam proper and down Peninsular Siam to Trang or farther.

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[11] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 245, 1934.

The name *Corydon sumatranus* (Raffles)[12] is evidently to be used for the species. *Eurylaimus corydon* Temminck[13] is a nomen nudum where first used and was not properly used until about two years later,[14] while in the meanwhile Raffles had named it.

A dark-throated form from Borneo similar to that of Sumatra has been named *C. s. brunnescens* by Hartert. *C. s. sumatranus* (Raffles) is confined to Sumatra.

CYMBIRHYNCHUS MACRORHYNCHUS MALACCENSIS Salvadori

Cymbirhynchus malaccensis SALVADORI, Atti Reale Accad. Sci. Torino, vol. 9, p. 425, 1874 (Malacca).

Three males and three females, Bangnara, Patani, May 30, 1924, July 5–12, 1926; one female, Ban Peng Sao, Nakon Sritamarat, July 27, 1928; one female, Pak Bhayoon, Nakon Sritamarat, July 4, 1928; two females, Bandon, January 7, 1927; two males and four females, Tha Lo, Bandon, September 13–16, 1931; two females, Pran, May 26, 1928; April 2, 1931; two males, three females, and one unsexed, Muang Kanburi, April 9–11, 1928; three males and three females, Nong Khor, near Sriracha, September 23, 1925, February 12, 1927; one female, Ban Tarn Dam, near Sriracha, March 6, 1930; one male and one female, Sakeo, near Krabin, May 3, 1928; four males and one female, Kao Seming, Krat, October 10–15, 1928, August 27, 1931; one set of four eggs, Ban Sadet, May 25, 1925. Dr. Smith describes the soft parts as: Iris green; bill greenish blue; legs blue.

Dr. W. L. Abbott collected the following: Two males and six females, Trang (Tyching, May 29–July 3, 1896; Lay Song Hong, September 30, 1896; Chong, January 21, 1897; near Kao Nok Ram, January 4, 1899); one male, Packa, Trengganu, September 27, 1900, and one female, Bok Pyin, Tenasserim, February 11, 1900. He also took three sets of three eggs each in Trang, May 29, 30 and June 19, 1896; all with incubation begun. He describes the soft parts as: Bill pale blue, the lower mandible orange, except along the commissure; feet leaden blue, soles brownish yellow; iris emerald-green.

Two of the specimens collected by Dr. Abbott in Trang and the one from Tenasserim have the under tail coverts ochraceous-tawny, and two others from Trang and the one from Trengganu are similar but have a garnet-brown wash. Strange to say, none in the large series collected by Dr. Smith matches them; they have the under tail coverts red like the breast. As all the birds from Trang do not possess this character, I conclude it is an individual variation. As Robinson and Kloss[15] have remarked, there is a progressive increase in the amount of white in the tail from the southern part of the range toward the northern. It is variable, however.

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[12] Trans. Linn. Soc. London, vol. 13, p. 303, 1822.

[13] Nouveau recueil de planches coloriées d'oiseaux, livr. 22, in text, May 1822.

[14] Nouveau recueil de planches coloriées d'oiseaux, livr. 44, pl. 297, described on same leaf with pl. 261, March 1824.

[15] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 207, 1923.

Chasen and Kloss [16] record this broadbill from the Raheng District, western Siam; Lowe [17] encountered it 40 miles east of Um Pang in the same general region; Kloss [18] records it from Lat Bua Kao in the east. These records seem to define the limits of its distribution to the west, north, and east in Siam, whence it has been found from the southeastern part of the country westward and south throughout Peninsular Siam.

The range of the form extends from Cochinchina and Cambodia westward through the southern half of Siam to Tenasserim and down Peninsular Siam to the Malay States.

C. m. macrorhynchus (Gmelin) has little or no white in the tail and a large bill and is confined to Borneo.

C. m. lemniscatus (Raffles) occurs in Sumatra and Banka. It is similar to the mainland form but has a larger bill; it is doubtfully distinct.

Seven males from Borneo measure: Wing, 96–105 (101.6); tail, 82–92 (86.9); culmen, 24.5–26.5 (25.5) mm. Three males from Banka (1) and Sumatra (2): Wing, 100.5–107.5 (102.7); tail, 80–91 (85.3); culmen, 24–26.5 (25.3) mm. Four males from Trengganu (1) and Patani (3): Wing, 97–105 (101); tail, 76–86 (82.7); culmen, 23.5–24.5 (24) mm. Four males from Trang (2) and Bandon (2): Wing, 94–101 (96.6); tail, 76–86 (82.9); culmen, 22–23.5 (22.6) mm. Ten males from southwestern (2) and southeastern (8) Siam measure: Wing, 99–105 (102); tail, 84–90 (87.8); culmen, 22.5–25 (23.4) mm.

Only one specimen has been available for examination from the Malay States (Trengganu), except for some old Malacca skins.

SERILOPHUS LUNATUS LUNATUS (Gould)

Eurylaimus lunatus Gould, Proc. Zool. Soc. London, 1833, p. 133, 1834 (Rangoon, Burma).

One male and one female, Khun Tan, September 2, 1930; one female, Khun Tan Mountains, 4,300 feet, May 11, 1933; one male and two females, Doi Hua Mot, August 13, 27, 1934. Dr. Smith gives the soft parts as follows: Bill pale turquoise, pale yellow at the base; lower lid pale lemon; legs and feet pale green, nails pearly green; iris brown.

De Schauensee [19] assigns specimens from Chieng Dao, northern Siam, to *S. l. stolidus* of Peninsular Siam, but the three above specimens do not agree with three from Kao Luang, Nakon Sritamarat. They are lighter on the rump and tertials than the Peninsular birds, and if they are not *S. l. lunatus* they must belong to an unnamed form. For the present I prefer to consider them as belonging to the same form as birds from Burma, though I have not examined any from the latter country.

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[16] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 172, 1928.

[17] Ibis, 1933, p. 282.

[18] Ibis, 1918, p. 114.

[19] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 246, 1934.

The form has been taken in northern Siam by several collectors. Lowe[20] found it in small parties 28 miles east of Um Pang to the Meping River, western Siam; Robinson and Kloss[21] report it from Tapli, Pakchan Estuary, and Tasan, Chumporn, Peninsular Siam, which is the limit of its range to the south. They found it in dry bamboo jungle at Tapli and in deeper, more evergreen jungle at Tasan. Deignan[22] reports it ranging on Doi Sutep between 2,600–4,500, and de Schauensee took his Chieng Dao specimen at 4,000–4,600 feet.

The form ranges from Pegu and Karenni to southern Tenasserim, the South Shan States, Burma, and northern, western, and northern Peninsular Siam.

SERILOPHUS LUNATUS STOLIDUS Robinson and Kloss

Serilophus lunatus stolidus ROBINSON and KLOSS, Bull. Brit. Orn. Club, vol. 40, p. 16, 1919 (Kao Nawng, Bandon, Peninsular Siam).

Three males, Kao Luang, Nakon Sritamarat, July 19, 1928.

These three specimens agree with the original description in having deeper-colored inner secondaries and tertiaries and the drab, less fulvous ear coverts. The rumps are also darker.

At present this form is known only from the middle portion of Peninsular Siam (Bandon, Nakon Sritamarat, and Tung Song).

S. l. rothschildi Hartert and Butler, of the mountains of the Malay States, has not been available for examination. It is said to have a deeper, brighter rump and secondaries than *S. l. stolidus.* It may extend into western Patani.

SERILOPHUS LUNATUS ELISABETHAE La Touche

Serilophus lunatus elisabethae LA TOUCHE, Bull. Brit. Orn. Club, vol. 42, p. 14, 1921 (Hokow, southeastern Yunnan).

One male and one female, Kao Lem, Sankambeng Range, eastern Siam, December 28, 1930; one male, Lamton Lang, June 1, 1934.

The two specimens from Kao Lem agree fairly well with a specimen received in exchange from the Paris Museum from North Annam. This form is grayer and has a deeper-colored rump and inner flight feathers than *S. l. stolidus.* The specimen from Lamton Lang is not so deeply colored as the Kao Lem birds and is without the white juglar collar; it may not be fully adult.

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[20] Ibis, 1933, p. 283.

[21] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 205, 1923.

[22] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 156, 1931.

The form ranges from southeastern Yunnan and Tonkin to Laos, Annam, and eastern Siam. Stuart Baker's [23] record from Hupbon probably belongs here.

Two other races of this species have been named: *S. l. polinotus* Rothschild from Hainan and *S. l. intensus* Robinson and Kloss from Sumatra.

PSARISOMUS DALHOUSIAE DALHOUSIAE (Jameson)

Eurylaimus dalhousiae Jameson, Edinburgh New Phil. Journ., vol. 18, p. 389, 1835 (northern India).

Two males and three females, Khun Tan, October 16, 25, 1929, August 26 and September 2, 1930; one male, Doi Hua Mot, August 24, 1934; one male, Pang Meton (Doi Nangka), April 30, 1931; one female, Khun Tan Mountains, 3,000 feet, May 13, 1933; two males and one female, Kao Pae Pan Nam, Lamsak, February 18–19, 1934. Dr. Smith also secured a male at Pang Wua Yao, eastern Burma, January 27, 1933.

Strange to say, this bird has not been recorded from Peninsular Siam, though it is well known in the Malay States. As yet the form has been recorded from Siam only from the northern and western parts of the country.

Chasen and Kloss [24] state that specimens examined by them from the Raheng district are somewhat different from birds from Doi Sutep, but the United States National Museum received a part of this Raheng collection, consisting of five specimens, and they are somewhat worn and, allowing for wear, can be matched or nearly so by a specimen from Khun Tan.

I have examined only one specimen from the Malay States, a female from Semangko Pass, Selangor-Pahang Boundary. It is more of a grass, less yellowish, green than northern birds above and a paler green below. It probably belongs to the Sumatran form, as Chasen and Kloss [24] have suggested.

Psarisomus dalhousiae dalhousiae ranges in the Himalayas from Kuman east to eastern Assam south through Burma to western and northern Siam, Laos, and Tonkin. *P. d. psittacinus* (Müller) inhabits Sumatra and probably the Malay States. *P. d. borneensis* Hartert occurs in northwestern Borneo.

Only one rather poor skin has been examined from India and none at all from Sumatra. This Indian specimen has more green at the base of the outer tail feathers and the neck tufts have less white than northern Siam specimens. It is also a bluer green, but this may be due to age.

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[23] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 419, 1919.

[24] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 237, 1932.

Dr. Smith took an immature female at Khun Tan, September 2. It is of about adult size, but it is in a plumage quite different from the adult. It may be briefly described as follows: Head green, blackish on the nape; lores green; spot in front of eye and patch below eye citron yellow; supra-auricular tuft lemon-yellow; auriculars blackish, washed with green and light yellow; neck patch picric yellow washed with light green; remainder of upperparts green as in the adult; throat picric yellow washed with light green; remainder of lowerparts vanderpoel green; wings similar to the adult; tail peacock green, bluish along the shaft of the feathers on the inner web, all but the central feathers blackish on the inner web beyond the bluish shaft line. An immature male from Doi Hua Mot, August 24, is similar, except that it has a few blue feathers on the nape.

Gyldenstolpe records it from Pa Hing [25] and from Meh Nja Min [26]; Deignan [27] states that it is rare on Doi Sutep at 3,500–4,600 feet. Lowe [28] found it 28 miles east of Um Pang.

PSARISOMUS DALHOUSIAE CYANICAUDA Riley

Psarisomus dalhousiae cyanicauda Riley, Proc. Biol. Soc. Washington, vol. 48, p. 54, 1935 (Kao Sabab, southeastern Siam).

Five males and four females, Kao Sabap, January 8, 1930, November 16–20, 1933.

This series differs from a still larger series from northern and western Siam in being darker, less yellowish, green above; below the green has a more bluish cast; the most pronounced difference, however, is in the color of the tail. In specimens from southeastern Siam it is near paris blue, while in northern birds it is more of an italian blue. In *cyanicauda* there is a reduction of the green edging on the outer web of the outer tail feathers at the base and it is confined to two or three; in northern skins even the middle tail feather has a green edging on the outer web at the base.

An adult male and female from Dran, southern Annam, in the United States National Museum seem to belong here.

P. d. cyanicauda is more like *P. d. psittacinus* of Sumatra and the Malay States than the northern form.

This form is evidently confined to southeastern Siam, Cambodia, and southern Annam.

Five males from southeastern Siam measure: Wing, 97.5–102.5 (100.8); tail, 122.5–135.5 (129.5); culmen, 18.5–19.5 (19) mm. Nine males from northern, central, and western Siam and eastern Burma (1): Wing, 97.5–106 (101.9); tail, 111–126 (120); culmen, 18–19.5 (18.8) mm.

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[25] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 229, 1915.

[26] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 86, 1916.

[27] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 156, 1931.

[28] Ibis, 1933, p. 283.

CALYPTOMENA VIRIDIS CONTINENTIS Robinson and Kloss

Calyptomena viridis continentis Robinson and Kloss, Journ. Federated Malay States Mus., vol. 11, p. 54, 1923 (Tasan, Chumporn, Peninsular Siam).

Five males and three females, Bangnara, Patani, May 11, 1924, July 4–14, 1926; four adult males, one immature male, and three females, Sichol, Bandon, August 31–September 3, 1929, May 16 and 27, 1930; one female, Tha Lo, Bandon, September 20, 1931; two females, Kao Soi Dao, Trang, January 1, 1934.

Dr. W. L. Abbott secured three males and three females at Lay Song Hong, Trang, September 2–December 24, 1896; three males and two females from the eastern coast of Johore (Endau River, June 26–27, 1901; Sembrong River, July 6, 1901; and Jambu Luang, August 2, 1901); two females from the Rumpin River, Pahang, June 10–11, 1902. He gives the soft parts as: Iris blackish brown; upper mandible dark horn brown, tip brownish yellow; lower mandible greenish lead, tip yellow; feet green.

There seems to be no difference in size or color between specimens from the Malay States and those from Bandon. I have no birds from Sumatra for comparison. The wings of 15 males from the Malay Peninsula measure 98.5–107 (102.9) mm; of four females, 103.5–111.5 (105.8) mm.

Four males and five females before me from Borneo are darker, less yellowish, green than Malay Peninsula birds; they are also smaller. The wings of four males from Borneo measure 94–97 (95.4) mm; of five females, 99–105 (101.8) mm. Whether Bornean birds belong with those from Sumatra I cannot decide without material from the latter island, but Robinson and Kloss seem to regard the birds from these two islands as the same.

The immature male taken by Dr. Smith at Sichol, Bandon, August 31, is similar to the adult female but is less yellowish green both above and below. It is about adult in size.

Gyldenstolpe [29] took a female at Hat Sanuk and observed a few more. This is its most northern record in Siam. Robinson and Kloss [30] record it from Koh Rah, Takuapah; Tapli, Pakchan Estuary, and Tasan, Chumporn, and remark that it has been obtained as far north in Tenasserim as Amherst. Robinson [31] reports finding a nest with two hard-set eggs on Kao Nawng, Bandon, June 25, and gives a description of the nest and eggs.

The range of the form is from Amherst, Tenasserim, and Hat Sanuk, Peninsular Siam, southward through Peninsular Siam to the Malay States, and it has been recorded from Cochinchina.

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[29] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 85, 1916.

[30] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 202, 1923.

[31] Journ. Federated Malay States Mus., vol. 5, p. 96, 1915.

C. v. viridis Raffles is confined to Sumatra and (?) Borneo. A darker form, *C. v. siberu* Chasen and Kloss, is confined to the Mentawi Islands, off the west coast of Sumatra.

Family PITTIDAE: Pittas

ANTHOCICHLA PHAYRII PHAYRII Blyth

Anthocichla phayrii Blyth, Journ. Asiat. Soc. Bengal, vol. 31, p. 343, 1862 (Toungхoo, Burma).

One male, Pang Sok, eastern Siam, August 19, 1926; one male, and two females, Kao Pae Pan Nam, Lamsak, February 18–19, 1934.

One of the females from Kao Pae Pan Nam is immature. It is about full grown. The black head markings of the adult are replaced by brown like the back; the chest and sides are spotted or barred with black; the back is darker brown than the adult, but the lower parts are lighter.

I have examined no birds from northern Siam, but two males from Klong Menao, southeastern Siam, do not seem to differ appreciably.

Gyldenstolpe[32] records it from Pak Koh and Khun Tan, northern Siam; Robinson[33] from Ok Yam, Franco-Siamese boundary, and Klong Menao, southeastern Siam; de Schauensee[34] also took a female at Khun Tan at about 3,500 feet, and found it not so dark as specimens from Bolovens, Laos.

The form ranges from Burma east of Sittoung River, Tenasserim, and the Shan States, to northern, eastern, and southeastern Siam and southern Laos.

Delacour has named a form from northeastern Tonkin *A. p. obscura.*

PITTA OATESI OATESI (Hume)

Hydrornis oatesi Hume, Stray Feathers, vol. 1, p. 477, 1873 (Upper Pegu).

One female, Pang Meton (Doi Nangka), April 30, 1931; two females, Khun Tan, 3,000 feet, February 22 and 24, 1932; one male, Khun Tan Mountains, 3,000 feet, May 12, 1933. Dr. Smith notes the colors of the soft parts as follows: Iris brown; bill above dark brown, below horn; legs pinkish flesh.

The male from the Khun Tan Mountains has the throat and chest washed with light ochraceous-salmon.

No specimens are available for comparison. One female from Khun Tan has little green on the mantle, it being rusty and showing only a greenish wash in certain lights.

Williamson[35] records the form from Muang Wan, northern Siam;

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[32] Kungl. Svenska Vet.-Akad. Handl., vol 56, no. 2, p. 84, 1916.

[33] Ibis, 1915, p. 742.

[34] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 244, 1934.

[35] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 24, 1918.

Gyldenstolpe[36] adds the locality Khun Tan; de Schauensee[37] met with it at Chieng Dao, 4,500 feet, and at Chiengmai; Deignan[38] records it from Doi Angka. Evidently it is not a common bird in northern Siam.

The form ranges from eastern Burma and the southern Shan States to Tenasserim, Pegu, and Arakan and eastward to northern Siam. A related form, *P. o. castaneiceps* Delacour and Jabouille, occurs in Tonkin and another, *P. o. bolovenensis* Delacour, in southern Laos.

PITTA CAERULEA CAERULEA (Raffles)

Myiothera caerulea Raffles, Trans. Linn. Soc. London, vol. 13, p. 301, 1822 (Sumatra).

One female, Kao Soi Dao, Trang, January 23, 1934.

Dr. W. L. Abbott collected one male and one immature female at Lay Song Hong, Trang, August 20 and December 2, 1896; and one male at Telok Besar, Tenasserim, March 18, 1904.

The immature female is about half grown and was collected August 20. It may be described as follows: Pileum clay color, lighter on the forehead; feathers of the crown and nape blackish at the base and edges, giving a flammulated appearance; hindneck and sides of neck clay color, with the black bases of the feathers showing through; throat and sides of face cinnamon-buff; a loral streak and postocular extending back to the neck blackish; upperparts fuscous; tail, almost hidden by the coverts, deep orient blue; chest fuscous-black; breast hair brown, the feathers fringed with cinnamon-buff; belly light buff; under tail coverts dusky; wing coverts dusky drab with a bluish tinge, border and tip light buff; primary coverts and primaries fuscous-black, the latter dull bluish gray on the outer web, border and tip narrowly edged with light buff; outer secondaries similar to the primaries; tertials dull grayish blue.

This is somewhat different from the young described by Stuart Baker[39] but his description is probably taken from older birds.

Robinson and Kloss[40] say that this form is rare in the Malay States but becomes commoner farther north, as they secured several specimens from Trang and record two from Tasan, Chumporn. It breeds in the Malay States, however, as Robinson[41] records a half-grown young obtained early in November at Pelarit, Perlis. Baker[42] records it from Maprit, southwestern Siam, which is about as far north as it has been obtained in Siam.

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[36] Ibis, 1920, p. 580.

[37] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 244, 1934.

[38] Journ. Siam Nat. Hist. Soc. Suppl., vol. 10, p. 64, 1935.

[39] The fauna of British India, Birds, ed. 2, vol. 3, p. 418, 1930.

[40] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 220, 1924.

[41] Journ. Federated Malay States Mus., vol. 5, p. 20, 191?

[42] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 417, 1919.

The form ranges from Nwalabo Mountain, Tenasserim, south through Peninsular Siam to the Malay States and Sumatra. The Bornean form has been separated as *P. c. hosei* Stuart Baker.

PITTA CYANEA CYANEA Blyth

Pitta cyanea Blyth, Journ. Asiat. Soc. Bengal, vol. 12, p. 1008, 1843 (Arrakan).

Two males, one adult, and one immature female, Khun Tan, August 24–30, 1930. Dr. Smith also took an adult male not far over the border in eastern Burma, January 27, 1933. He describes the soft parts as follows: Iris dark brown; bill black; legs pale pinkish flesh.

The immature female from Khun Tan was taken August 24. It is molting from the spotted juvenal plumage into the postjuvenal and the change is almost completed. The juvenal plumage is still retained on the head, chest, sides of breast, mantle, and wing coverts.

No suitable material is available for comparison.

This pitta has been taken in northern, central, and western Siam, but it has not been taken farther to the southwest than the Petchaburi district, where it has been reported by Gairdner.[43] Herbert reports a nest and five eggs found by his collector at Chiengrak Noi, central Siam, June 14, and gives a description of them.[44]

The form ranges from the sub-Himalayas of Bhutan to eastern Assam, Cachar, Tippera, Chittagong, and Manipur to southern Tenasserim and east to northern, western, and central Siam.

PITTA CYANEA AURANTIACA Delacour and Jabouille

Pitta cyanea aurantiaca Delacour and Jabouille, Bull. Brit. Orn. Club, vol. 48, p. 130, 1928 (Bokor, South Cambodia).

Two females, Kao Bantad, Krat, December 22 and 29, 1929; three males and one female, Kao Sabap, October 23–November 22, 1933.

This form can readily be distinguished from *P. c. cyanea* by the grenadine-red instead of scarlet nape.

It has been taken also in southeastern Siam by de Schauensee, who reports it from Chantaboon,[45] but Kloss took it at Klong Menao many years previously.[46]

The form is confined to southeastern Siam and southern Cambodia.

In the mountains of southern Annam and mountains of Laos a related form *P. c. willoughbyi* Delacour, is found. It differs from *aurantiaca* in having the blue of the chest more purplish, the chest tinged with peach red, and the nape a deeper scarlet even than in *P. c. cyanea* and consequently deeper than in *aurantiaca*.

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[43] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 149, 1915.

[44] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 296, 1924.

[45] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, pp. 4, 245, 1934.

[46] Robinson, Ibis, 1915, p. 742.

PITTA MOLUCCENSIS (Müller)

Turdus moluccensis Müller, Natursystem, Supplements, p. 144, 1776 (Moluccas, error; Tenasserim [47]).

Two males and one female, Lat Bua Kao, July 29–August 11, 1929; one male and one female, Pak Chong, May 4, 1926, June 21, 1934, one male, Lam Klong Lang, Pak Chong, June 9, 1925; one male, Sakeo, near Krabin, May 6, 1926; one immature male, Nong Mong, Krabin, August 20, 1925; one male, Lamton Lang, May 30, 1934; two females, Ban Sadet, Sriracha, May 31–June 2, 1925; two adult males and two immature males, Huey Yang, Sriracha, August 1–7, 1932; one male, Muang Kanburi, April 16, 1928; one male, Pran, May 26, 1928; one male, Koh Lak, June 6, 1933; one male, Kao Soi Dao, Trang, January 6, 1934; one female, Yala, Patani, February 2, 1931. One set of four eggs, Pran, May 29, 1928.

Dr. W. L. Abbott collected nine males and four females in Trang (Tyching, April 24–July 2, 1896; Chong, January 21, 1897; near base of Kao Nom Plu, March 10, 1897); one male, Pulo Langkawi, December 8, 1899; one female, Pulo Rupat, Straits of Malacca, March 15, 1906. He also took four sets of eggs in Trang as follows: Three of four eggs each, May 29, June 19 and 21; one of five eggs, July 2; six eggs from two nests, July 11; also a nest of five half-fledged young was brought to him, June 22; these evidently were not saved, as they are not among his specimens. All were taken in 1896. He gives the soft parts as: Iris dark brown; bill black; feet purplish fleshy.

This species occurs rather regularly all over Siam; it is migratory in the north and perhaps partially so farther south. Gyldenstolpe [48] records it from Ban Mehna and Pa Hing, northern Siam. Robinson [49] records it from Pulo Dayang Bunting, Langkawi, and Terutau; previously he had recorded it from Koh Samui, off Bandon,[50] and there are records from all sections of the country. Robinson took a set of five hard-set eggs at Ban Kok Klap, Bandon; the date is not given, but the party was at this locality between June 29 and July 6. He also found nestling birds.[51] Herbert [52] took a nest and four eggs at Chiengrak Noi, central Siam, June 24.

A male taken by Dr. Smith at Lat Bua Kao, August 11, has molted all the feathers of the head and neck at one time and left it perfectly bare. The pinfeathers are just coming in. If this is the usual style of molt and not accidental, it is rather unusual.

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[47] Stuart Baker, The fauna of British India, Birds, ed. 2, vol. 3, p. 450, 1930. This seems a very unlikely type locality for this early date.

[48] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 85, 1916.

[49] Journ. Federated Malay States Mus., vol. 7, p. 167, 1917.

[50] Journ. Federated Malay States Mus., vol. 5, p. 147, 1915.

[51] Ibid., p. 97.

[52] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 297, 1924.

The species ranges from Aracan and Pegu to Tenasserim, Burma, Siam, Cambodia, Cochinchina, and Laos and south through Peninsular Siam to the Malay States, Sumatra, Borneo, and some of the adjacent islands.

Oberholser[53] named the bird from the Island of Nias *P. m. lepta.* He evidently founded the form upon size alone and upon two males only from Nias and a female from Pulo Tuanku, Banjak Islands. No other differences are mentioned in the original description and I have found none. Even size in such a small series is not diagnostic and for the present this name is better not recognized until more material has been examined.

The two males from Nias measure: Wing, 119–120; tail, 38–39.5; culmen, 25–26 mm. Six males from eastern Sumatra: Wing, 120–130 (126); tail, 41.5–44 (42.8); culmen, 26.5–28.5 (27.5) mm. One male from central Borneo: Wing, 130; tail, 43; culmen, 26 mm. Nine males from Langkawi (1) and Trang (8): Wing, 122–129.5 (125.7); tail, 40–46 (42.9); culmen, 25–28 (26.7) mm. Seven males from southwestern, central, and eastern Siam: Wing, 118–131 (125.9); tail, 40.5–50 (43.9); culmen, 24–28 (25.7) mm.

No birds have been examined from northern Siam. These are evidently rare in collections.

PITTA MEGARHYNCHA Schlegel

Pitta megarhyncha Schlegel, De vogels Nederlandsch Indië, p. 32, pl. 4, fig. 2, 1863 (Banka).

Dr. W. L. Abbott secured a single male in Rupat Strait, eastern Sumatra, March 1, 1906, and this is the only specimen of this species in the United States National Museum.

This is a rare bird in Peninsular Siam. Robinson and Kloss[54] record it from Pulo Terutau in March and Pulo Karimon and Pulo Bintang, Rhio Archipelago, in August and June and say there is an old mounted bird in the Selangor Museum labeled Pahang. Robinson[55] adds the locality Langkawi, and later Robinson and Kloss[56] record a male from the Pangnga River, Peninsular Siam, and state: "Shot among mangroves, outside which this species, at any rate in our experience is never found." This may account for its rarity in collections. It is similar to *P. moluccensis* but with a much larger bill (36 mm or less).

The species ranges from Tenasserim south through Peninsular Siam to the Malay States, Sumatra, Banka, and the Rhio Archipelago. Possibly migratory in the north.

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[53] Smithsonian Misc. Coll., vol. 60, no. 7, p. 8, 1912.

[54] Ibis, 1911, p. 48.

[55] Journ. Federated Malay States Mus., vol. 7, p. 167, 1917.

[56] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 221, 1924.

PITTA GRANATINA COCCINEA Eyton

Pitta coccinea EYTON, Proc. Zool. Soc. London, 1839, p. 104 (Malacca).

One female, Rumpin River, Pahang, July 16, 1902, collected by Dr. W. L. Abbott.

The range of this pitta is from southern Tenasserim southward to Singapore. Though it has been taken not uncommonly in the Malay States, I have seen no records from Peninsular Siam, but it must occur there, however, since it is found in Tenasserim.

In Borneo the related form, *P. g. granatina* Temminck, is found.

PITTA CUCULLATA CUCULLATA Hartlaub

Pitta cucullata HARTLAUB, Rev. Zool., 1843, p. 65 (Malacca).

One male, Koh Kut, May 24, 1929; one male, Kao Sabap, June 30, 1931.

This form very probably occurs nearly all over Siam, but so far as known to me it has never been taken in northern or eastern Siam. Most of the records come from Peninsular Siam, where it is migratory, according to Robinson and Kloss.[57]

It breeds in southeastern Siam, as Herbert [58] reports a set of four eggs taken by his collector at Hupbon, June 27, and gives a description of the eggs.

The United States National Museum possesses a male from southwest of Laichau, Tonkin, taken May 27. It is varleys green above, while the two males from southeastern Siam are hellebore green on the upperparts; the pileum is a brighter, more russet brown, the black neck band is broader, and the shoulder patch and rump are a brighter, deeper blue, also. It measures: Wing, 109.5; culmen, 23 mm. The two males from southeastern Siam measure: Wing, 108–118; culmen, 21.5–23 mm.

The range of the present form extends from the Himalayas of Nepal to eastern Assam, eastern Bengal, Burma, Siam, and Tonkin and south through Peninsular Siam to the Malay States and Sumatra.

In the Nicobars a related form, *P. c. abbotti* Richmond, is found; *P. c. bangkana* Schlegel occurs on Banka and Billiton.

PITTA SORDIDA MULLERI (Bonaparte)

Brachyurus mulleri BONAPARTE, Conspectus generum avium, vol. 1, p. 256, 1850 (Celebes, error; Borneo).

One male, Bangnara, Patani, July 18, 1926.

This bird apparently has not been recorded before from Siam or the Malay States. It is readily distinguished from *P. c. cucullata* by having the pileum entirely black.

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[57] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 221, 1924.

[58] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 297, 1924.

The range is Borneo, Java, Banka, and Sumatra; accidental (?) in Peninsular Siam. A closely related form, *P. s. sordida* (Müller), is found in the Philippines and another, *P. s. sanghirana* Schlegel, on the Sanghir Islands.

EUCICHLA GURNEYI (Hume)

Pitta gurneyi HUME, Stray Feathers, vol. 3, p. 296, pl. 3, 1875 (southern Tenasserim).

Dr. W. L. Abbott took a male and female in Tenasserim (Sungei Balik, February 26 and Telok Besar, March 1904). He gives the soft parts as: Iris dark brown; bill black; feet pale fleshy.

This species occurs rather commonly in Peninsular Siam and has been taken from Koh Lak in the north, south to Trang, but not much farther, according to Robinson and Kloss.[59] These authors report that more than 30 specimens have been taken [60] in Trang, and it has been collected from various points to the northward. Herbert [61] records a set of four eggs taken by his collector at Klong Wang Hip, Tung Song, Peninsular Siam, October 9, and gives a description of them.

EUCICHLA IRENA (Temminck)

Pitta irena TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 100, text to pl. 591, not figured, 1836 (northern Sumatra).

One male and two females, Sichol, Bandon, August 29, 31, 1929, and May 21, 1930; two males and two females, Kao Chong, Trang, August 29–30, 1933; six males and two females, Kao Soi Dao, Trang, December 27, 1933–January 28, 1934.

Dr. W. L. Abbott collected six males and two females in Trang (Prahmon, April 8, 1896; Lay Song Hong, August 20–December 2, 1896; Kao Nok Ram, January 7, 1899).

Two males from Sumatra in the United States National Museum compared with the mainland series are a deeper, more reddish, brown on the back; below, the blue of the breast is brighter and not so dark; the red barring on sides of chest is purer. The mainland bird may belong to a different race.

This form ranges from Sumatra to the Malay States and northward through Peninsular Siam to Tasan, Chumporn, whence Robinson and Kloss [62] report specimens. Robinson [63] reports taking a nest with three eggs on Kao Nawng, 700 feet, June 10, and gives a description and measurements of the eggs.

This species is sometimes treated as a race of *Eucichla guayana*, but it is so widely different that to so treat it, is to ignore these fundamental dissimilarities.

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[59] Journ. Siam Soc. Nat. Hist., vol. 5, p. 222, 1924.

[60] Ibis, 1911, p. 49.

[61] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 298, 1924.

[62] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 223, 1924.

[63] Journ. Federated Malay States Mus., vol. 5, p. 97, 1915.

Family ALAUDIDAE: Larks

MIRAFRA ASSAMICA MARIONAE Baker

Mirafra assamica marionae BAKER, Bull. Brit. Orn. Club, vol. 36, p. 34, 1915 (Ayuthia, central Siam).

Two males and one female, Koh Lak, June 5, 1933; one male, Potaram, February 4, 1926; three males, Ban Pong, September 17, 18, 1929; one unsexed, Nong Kae, May 6, 1929; two females, Chiengmai, November 24, 1928; one male and one female, Noan Wat, February 14, 1929.

The only specimen of *M. a. assamica* available for comparison has a longer, heavier bill, less heavily streaked upperparts and chest, and the wing is longer.

The form ranges from Tenasserim through Siam to Assam and east to Cochinchina, Cambodia, and southern Annam. It apparently occurs all over Siam proper in suitable localities and as far to the southwest as Koh Lak.

MIRAFRA JAVANICA WILLIAMSONI Baker

Mirafra cantillans williamsoni BAKER, Bull. Brit. Orn. Club, vol. 36, p. 9, 1915 (Bangkok, Siam).

Fifteen males and nine females, Bangkok, September 2, 1923, February 7, 1924, November 11, 1925, June 23–October 30, 1926; one female, Nakon Patom, April 10, 1926; one male, Nong Kae, May 7, 1929; one male, Bung Borapet, March 25, 1933; one male, Bung Tabgrit, March 27, 1933.

A small series of *M. j. javanica* is buffier and browner above and buffier below and the bills are much heavier than in *williamsoni*.

Five immatures were collected by Dr. Smith in June, five in August, and one September 6. They are about adult size, none very young. The plumage greatly resembles the adult above but is darker and lacks the cinnamon-buff edgings; the feathers are more truncate at the tip and are narrowly edged with light buff; the crest is short, clove brown, the feathers truncate with a narrow buffy fringe; below they are much like the adult but lighter, the chest streaks less clearly defined or almost absent.

Herbert [64] states that they breed around Bangkok in May and June and as late as the end of July; he describes the nest and eggs. Kloss [65] took a single female at Lat Bua Kao. This specimen is now in the United States National Museum and is darker below than any specimen in the considerable series collected by Dr. Smith; it is also buffier and more grayish above. It may belong to the form described by Delacour [66] from Honquan, Cochinchina, as *M. j. beaulieui*.

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[64] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 217, 1923.

[65] Ibis, 1918, p. 222.

[66] L'Oiseau, new ser., vol. 2, p. 616, 1932.

The male taken at Nong Kae, May 7, by Dr. Smith almost lacks the chest streaks, and the light edges to the feathers above have disappeared through wear, making a quite different looking bird.

The range of the form extends from eastern Tenasserim to central Siam.

ALAUDA GULGULA HERBERTI Hartert

Alauda arvensis herberti Hartert, Bull. Brit. Orn. Club, vol. 43, p. 149, 1923 (near Bangkok, Siam).

Five males, two females, and one unsexed, Bangkok, August 3–November 3, 1926.

Two specimens, taken August 3, are birds of the year but nearly of adult size.

This is a small dark form of skylark that I have been unable to compare with *A. g. gulgula*.

Williamson[67] found it resident at Bangkok and procured young in April and May. Herbert[68] reports it nesting there from early in May, or earlier, to the end of June or into July and described the nest and eggs; Kloss[69] reports it from Koh Lak; de Schauensee[70] from Petrieu.

As far as known, this form ranges from southeastern Tenasserim to southwestern and central Siam.

Family HIRUNDINIDAE: Swallows

DELICHON URBICA CASHMERIENSIS (Gould)

Chelidon cashmeriensis Gould, Proc. Zool. Soc. London, 1858, p. 356 (Cashmere).

Two females, Sichol, Bandon, May 17, 1930.

These two specimens agree fairly well with a pair from the mountains of Szechwan, except the throat and chest are more grayish. This seems to be a more southern record than any made so far and an exceptionally late date. The wings measure 104.5 and 108 mm, which seems to be rather large for the form. Five females from Szechwan measure 97–102 (100 mm). Hartert[71] gives 97–104 mm.

De Schauensee[72] took specimens on Doi Sutep, where it did not occur below 4,500 feet; Deignan[73] states that it occurs on Doi Sutep from November to April.

The form breeds from the Himalayas of Kashmir through the high mountains to western Szechwan to Kansu, China, migrating farther south to winter.

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[67] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 205, 1917.

[68] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 216, 1923.

[69] Ibis, 1918, p. 221.

[70] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 239, 1934.

[71] Die Vögel der paläarktischen Fauna, Band 1, Heft 6, p. 810, 1910.

[72] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 560, 1930.

[73] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 153, 1931.

RIPARIA CHINENSIS CHINENSIS (Gray)

Hirundo chinensis GRAY, Illustrations of Indian zoology, vol. 1, no. 2, pl. 35, fig. 3, 1830 (China).

One male and two females, Hang Tum Kai, January 15, 1933. Dr. Smith collected these in holes at night. He also took a male and a female at Mehick, Burma, January 13, 1933.

The only specimens with which I have been able to compare the above series are three males and one female from Luzon, which are certainly darker above; below the throat and chest are darker also, but the size is about the same. The wings of the four Luzon birds measure 83–90 (86.8 mm); the five Burma (2) and Siamese (3) specimens, 84–91 (88 mm).

Gyldenstolpe[74] found it common in Chienghai and along some of the larger rivers of northern Siam. De Schauensee[75] reports it common over the Mekong and Mekoke. Lowe[76] records it from Um Pang.

The form breeds practically all over India east to Assam, Burma, northern Siam, Laos, Tonkin, Annam, Yunnan, and Formosa. The bird found in the Philippines is different and has been named *Riparia chinensis tantilla* Riley.[77] Stuart Baker[78] gives *Hirundo chinensis* Gray as being preoccupied by *Hirundo sinensis* Gmelin, 1789, but under Article 34 of the International Rules of Zoological Nomenclature the two are not homonyms.

KRIMNOCHELIDON CONCOLOR SINTAUGENSIS Baker

Krimnochelidon concolor sintaugensis BAKER, Bull. Brit. Orn. Club, vol. 54, p. 24, 1933 (Sintaug, 6,000 feet, Shan States).

One adult and one immature male, Doi Nangka, November 10, 1930, April 28, 1931; one adult female, Doi Hua Mot, August 12, 1934.

The two specimens taken at Doi Nangka were recorded as *Krimnochelidon concolor*,[79] as the present form had not been separated at that time and no specimens were (or yet are) available for comparison. De Schauensee[80] secured two specimens at Chiengao, 4,500 feet, January 12, 17, and one at Chiengmai, 4,500 feet, July 13. These are all the Siamese specimens known to me.

The immature male taken by Dr. Smith at Doi Nangka was collected April 28.

The form ranges from the Shan States eastward to Siam, Laos, Tonkin, and Annam.

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[74] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 83, 1916.

[75] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 560, 1930.

[76] Ibis, 1933, p. 279.

[77] Proc. Biol. Soc. Washington, vol. 48, p. 147, 1935.

[78] The fauna of British India, Birds, ed. 2, vol. 7, p. 225, 1930.

[79] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 155, 1933.

[80] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 237, 1934.

HYPUROLEPIS JAVANICA ABBOTTI Oberholser

Hypurolepis javanica abbotti OBERHOLSER, U. S. Nat. Mus. Bull. 98, p. 32, 1917 (Pulo Manguan, Anamba Islands).

Dr. W. L. Abbott collected the following: Two males and three females, Pulo Langkawi, December 1, 8, 1899; three males and two females, Mergui Archipelago (Loughborough Island, January 25, and Bentnick Island, March 10, 1900); one female, Packa, Trengganu, September 26, 1900.

This series agrees fairly well with the typical series from the Anamba Islands in color and size. The female from Trengganu is a bird of the year, with pale throat, no bay-colored forehead, and the upperparts, except the middle of the back, dull fuscous and glossless.

Williamson [81] records it breeding on Koh Sichang, Koh Phai, and Koh Phra, Inner Gulf of Siam. Robinson and Kloss [82] obtained a male on Pulo Langkawi in June; Robinson [83] records it from Koh Muk (Trang), Pulo Terutau, and Pulo Tengah, in addition to Langkawi, and states that it is a common resident all along the coast of the Malay Peninsula; Robinson and Kloss [84] state that Williamson has a male taken at Koh Lak and that it is a common resident everywhere in open country and on the coast (in the Malay Peninsula and southwestern Siam).

Birds of this genus seem to be partial to the seacoast and small islands off the coast.

The form has a wide range occurring from the coasts of Cambodia and southeastern Siam to southwestern Siam, southern Burma, Tenasserim, the Malay Peninsula, Anamba Islands, and probably some adjacent island groups.

HIRUNDO RUSTICA GUTTURALIS Scopoli

Hirundo gutturalis SCOPOLI, Deliciae florae et faunae insubricae, pt. 2, p. 96, 1786 (Panay, Philippines).

Two females, Sakon Nakon, March 11, 13, 1929; one male, Nong Khor, near Sriracha, March 3, 1926; one female, Bandon, January 4, 1927; three females, Koh Tao, Bandon, September 23, 1928; two males and one female, Kao Soi Dao, Trang, January 13, 18, 1934.

Dr. W. L. Abbott collected the following: One male, Tanjong Kalong, Singapore, October 24, 1899; two males and two females, Bok Pyin, Tenasserim, February 11, 13, 1900; one male, Victoria Point, Tenasserim, December 16, 1900; one female, Packa, Trengganu, September 26, 1900.

In the large series of this form in the United States National Museum (mostly migrants), there are a few that have the underparts vinaceous-cinnamon or tinged with this color, but they are all apparently birds of the year, and this color is lost as the breeding season approaches and the underparts become white from the chest downward. Most of the birds listed above are immature and are molting. The molt is not completed apparently until the birds reach the breeding grounds in April or later.

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[81] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 23, 1918.

[82] Ibis, 1911, p. 50.

[83] Journ. Federated Malay States Mus., vol. 7, p. 166, 1917

[84] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 224, 1924.

Williamson[85] states that this race occurs from August to about the middle of May at Bangkok and once on July 23; he also found it at Klong-Rangsit, May 29, and observed it in fair numbers on Koh Phai, July 17; Deignan[86] writes that it is irregularly common at Chiengmai from July to March. Apparently it is a common migrant and winter resident all over Siam proper and the Malay Peninsula.

The form breeds in eastern Siberia and all China and migrates south in winter through the Malay Peninsula and Archipelago as far as Australia; some winter as far north as southern China and Siam.

HIRUNDO HYPERYTHRA BADIA (Cassin)

Cecropis badia Cassin, Proc. Acad. Nat. Sci. Philadelphia, vol. 6, p. 371, 1853 (Malacca).

One male and two females, Kao Soi Dao, Trang, January 4–18, 1934.

Dr. W. L. Abbott took two males at Prahmon, Trang, March 21, 22, 1896. He gives the bill and feet as black and iris dark brown.

Ogilvie-Grant[87] records it from Patani; Robinson and Kloss say[88] that it is found only in the neighborhood of precipitous hills and cliffs; Robinson[89] records it as common at Bankok Klap, Bandon, and later[90] from Langkawi and Terutau; Robinson and Kloss from Nongkok, Ghirbi,[91] and Ronpibun, Nakon Sritamarat.[92]

Robinson[93] says that this handsome swallow is associated chiefly with the precipitous limestone hills and quartzite ridges, which occur throughout the Malay Peninsula, but cease at Kuala Lumpur. It used to breed near the Klang Gates and Batu Caves near the above city in May and June, and in the caves of the Patani States at the end of June and in July.

The form ranges from the state of Selangor northward in the Malay Peninsula to about Bandon or a little farther.

A smaller and duller-colored form, *H. h. hyperythra*, is confined to Ceylon.

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[85] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 199, 1917.

[86] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 153, 1931.

[87] Fasciculi Malayenses, pt. 3, p. 95, 1905.

[88] Ibis, 1911, p. 50.

[89] Journ. Federated Malay States Mus., vol. 5, p. 98, 1915.

[90] Journ. Federated Malay States Mus., vol. 7, p. 166, 1917.

[91] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 103, 1919.

[92] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

[93] The birds of the Malay Peninsula, vol. 1, p. 174, 1927.

HIRUNDO DAURICA NIPALENSIS Hodgson

Hirundo nipalensis HODGSON, Journ. Asiat. Soc. Bengal, vol. 5, p. 780, 1836 (central region of Nepal).

One male and one female, Doi Angka, 3,500 feet, December 7, 1928.

These agree better with specimens from the mountains of Szechwan than with *striolata* of Java and the Philippines. The wing of the male measures 118 mm; that of the female, 118.5 mm. Both specimens are molting into the breeding plumage, but the process is only about half completed.

This apparently is not a common bird in Siam, and there are few records. Williamson [94] first recorded it from Chiengmai as *Hirundo striolata.* De Schauensee [95] took specimens at Chiengmai and Chiengrai in winter that were identified as *nipalensis.* Deignan [96] states that it is irregularly common at Chiengmai and Doi Sutep to 5,500 feet between November and July.

The form breeds in the Himalayas and the high mountains of western China and in Fokien, eastern and northeastern China, migrating south in winter to northern India, Burma, Siam, Tonkin, Annam, and Cochinchina.

HIRUNDO SMITHII FILIFERA Stephens

Hirundo filifera STEPHENS, General zoology, vol. 13, pt. 2, p. 78, 1826 (India).

Dr. Smith took a female at Ban Tung Kwai Tao, Salwin River, Burma, January 12, 1933, and notes it as common. This is only a short distance from the Siamese boundary. Deignan [97] has recorded it from the Meping Gorges and on the plain in the Chiengmai region from January 28 to February 14, 1936. It has been taken on the Mekong in Laos.

The form ranges from Persia to India, the Shan States, Tenasserim, and east to Laos and Annam.

Family CAMPEPHAGIDAE: Cuckoo-shrikes

PERICROCOTUS FLAMMEUS ELEGANS McClelland

Pericrocotus elegans McCLELLAND, Proc. Zool. Soc. London, 1839, p. 156 (Khasia Hills, Burma).

Three males and five females, Doi Hua Mot, August 19–30, 1934; one female, Doi Phra Chao, August 6, 1934; four adult males, one immature male, and three females, Khun Tan Mountains, 2,000–4,200 feet, November 19–23, 1928, and May 18, 1933; eight adult males, two immature males, and three females, Khun Tan, 3,000–4,000 feet, October 18, 23, 1929, August 25–28, 1930, February 16–March 3,

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[94] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 23, 1918.

[95] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 561, 1930.

[96] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 153, 1931.

[97] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, pp. 99, 134, 1936.

1932; one male, Doi Sutep, February 3, 1932; one male, Chiengdao, January 29, 1932; one male, Pang Meton (Doi Nangka), May 6, 1931; one male, Doi Buak Hua Chang, December 25, 1932; one male and one female, Ban Nam Kien, Nan, April 19, 1930; one male, Udon, March 18, 1929; one male, Ban Han, Udon, March 17, 1929; one male, Aranya, July 19, 1930; two males, Nong Yang, October 20 and November 9, 1931; one male, Pang Sok, August 15, 1926; one immature male, Lamton Lang, May 26, 1934; one male, Chantuk, June 12, 1934.

In the above large series of males, two have the central tail feathers entirely black, five have the base of the central tail feathers black, then the outer web red for about two-thirds its length to the tip, one has the central tail feathers almost entirely red, except for a narrow black border on the outer web; the remainder have the exposed surface of the central tail feathers on the outer web red. All the males, except two, have only two outer primaries without red on the outer web; the two exceptions have three outer primaries without red on the outer web.

The only difference apparently between *elegans* and *flammifer* is the average smaller size of the latter, but even this is not constant.

Fourteen males from northern Siam measure: Wing, 90–103 (97.4); tail, 78–95 (87.4); culmen, 13–15 (14) mm. One male (no. 311643) has a longer wing (103 mm) than the average, but it is approached by one or more other males and I am regarding them as only extra large specimens.

I have followed de Schauensee [98] in assigning the above series to *P. elegans;* with the material at hand it is impossible to say whether *P. f. bakeri* La Touche is a synonym.

This is the common minivet over northern and eastern Siam and grades in the south into *P. f. flammifer.* It ranges from Yunnan to northern and eastern Siam and northern Burma; possibly east to Tonkin and Laos.

PERICROCOTUS FLAMMEUS FLAMMIFER Hume

Pericrocotus flammifer Hume, Stray Feathers, vol. 3, p. 321, 1875 (Pakchan, southern Tenasserim).

Two males, Bukit, Patani, January 24, 1931; one female, Patalung, July 8, 1929; one male, Kao Luang, Nakon Sritamarat, July 21, 1928; one male and one female, Ban Kiriwong, Nakon Sritamarat, July 11, 1928; one male, Kao Chong, Trang, September 6, 1933; one male, Bandon, January 6, 1929; one male and two females, Sichol, Bandon, May 19, 1930, August 31–September 1, 1929; two males, Tha Lo, Bandon, September 23, 24, 1931; one male and two females, Pran, April 1, 2, 1931; one male, Nong Nam Kiew, February 15, 1927; one male and one female, Nong Mong, Krabin, August 20, 1925; one female, Nong Khor, Sriracha, November 10, 1926; two males, Sakeo, near Krabin, May 3, 1928; one immature male, Kao Lem, December 25, 1930.

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[98] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 222, 1934.

Dr. W. L. Abbott collected three males, Trang (Prahmon, April 5, 1896; Chong, January 21, 1897; Trang, March 2, 1899); one male, Victoria Point, Tenasserim, March 31, 1900; one male, Tanjong Laboha, Trengganu, September 30, 1900.

Of the 14 adult males in the above series from Peninsular and southeastern Siam, nine have no red on the outer web of the three outer primaries, while six have a red spot on the outer web of the third outer primary. All have the outer web of the central tail feathers red. Four males from southern and southeastern Siam have only the two outer primaries with no red on the outer web; the outer web of the two central tail feathers is entirely red in all. They are more or less intermediate between northern Siamese and Peninsular Siamese specimens but are nearer the latter, and I am inclined to place them there as Robinson has done.[99]

Eleven males from Peninsular and southwestern Siam measure: Wing, 87.5–93 (89.8); tail, 73.5–81 (77.5); culmen, 13–15 (14) mm. Four males from southeastern Siam: Wing, 92.5–93 (92.7); tail, 75–80 (75); culmen, 13–14.5 (13.7) mm.

The United States National Museum possesses only one male of *P. f. xanthogaster* from Sumatra. It is smaller than *flammifer*, and four of the outer primaries are without red on the outer web. It measures: Wing, 77.5; tail, 65; culmen, 12 mm.

P. f. xanthogaster not only occurs in Sumatra and Borneo but also in the southern Malay States as far north as the northern boundary of Negri Sembilan and Johore. It apparently does not extend north to the Siamese territory. *P. f. flammifer* ranges from the northern boundary of Selangor and Pahang north through Peninsular Siam to Tenasserim and southwestern Siam and extends eastward through southern Siam to southeastern Siam and probably into Cambodia.

PERICROCOTUS BREVIROSTRIS AFFINIS (McClelland)

Phoenicornis affinis McClelland, Proc. Zool. Soc. London, 1839, p. 157, 1840 (Assam).

Two males, Khun Tan, 4,000 feet, February 13, 1932.

These two males agree fairly well with three males from western Yunnan, except the wings are slightly smaller. The wings of the two Siam males measure 86.5 and 90 mm. Three males from Yunnan: 93, 93.5, and 94.

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[99] Birds of the Malay Peninsula, vol. 2, p. 151, 1928.

Count Gyldenstolpe[1] reports it from Doi Nga Chang south of Lakorn Lampong under the name *P. brevirostris*. De Schauensee[2] records it from Doi Sutep, 2,500–4,500 feet, December and Chiengsen, January. Mr. Aagaard collected both this and *P. b. neglectus* on Doi Sutep as recorded by Chasen and Kloss.[3] Later de Schauensee[4] secured both forms there also, the present one at a lower level, 2,000–4,600 feet, December 11–29.

P. b. affinis ranges from Assam to western Yunnan, northern Burma, and northern Siam.

De Schauensee[4] says that it is not a common bird in the north; possibly it may be only a winter visitor.

PERICROCOTUS SOLARIS SOLARIS Blyth

Pericrocotus solaris Blyth, Journ. Asiat. Soc. Bengal, vol. 15, p. 310, 1846 (Darjeeling).

Six males and four females, Doi Nangka, November 5–20, 1930, April 25, 1931; one female, Pang Meton (Doi Nangka), May 5, 1931; one male, Khun Tan, 4,000 feet, February 16, 1932; seven males and four females, Doi Hua Mot, August 12–September 4, 1934.

Count Gyldenstolpe[5] took a few at Khun Tan, recorded as *P. s. griseigularis*; de Schauensee[6] took a male at Chiengmai, recorded as above; Deignan[7] reports it not uncommon on Doi Sutep from 4,600–5,500 feet. Apparently it is a common bird in northern Siam.

The reds in this form are flame scarlet or even in some specimens orange-chrome, the chin pale gull gray, the throat washed with orange or a lighter yellow, the cheeks neutral gray.

The form ranges from Nepal to eastern Assam and northern Burma south to northern Siam and Tenasserim.

PERICROCOTUS SOLARIS MANDARINUS Stresemann

Pericrocotus solaris mandarinus Stresemann, Journ. für Orn., 1923, p. 363 (Lung-tau-shan, Kwantung, China).

One male and one female, Kao Kuap, December 24, 1929.

This form is apparently new for Siam, unless Count Gyldenstolpe's record of *P. s. solaris* from Non Luum in eastern Siam should prove to be it.[8]

The form is quite different from the bird I am calling *P. s. solaris*. The reds are brighter, scarlet rather than flame scarlet; the throat and cheeks are a darker gray, the former with a mere trace of a yellowish wash. In fact, it is more like *P. s. montanus* of the mountains of the Malay States; the latter has a still darker throat and cheeks with no yellowish wash at all on the former.

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[1] Ibis, 1920, p. 571.

[2] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 551, 1929.

[3] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 242, 1932.

[4] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 224, 1934.

[5] Ibis, 1920, p. 570.

[6] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 569, 1928.

[7] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 147, 1931.

[8] Ibis, 1920, p. 570.

P. s. mandarinus was described from southern China and has since been taken in Tonkin, Laos, and southern Annam. The present record extends it to southeastern Siam.

PERICROCOTUS CINNAMOMEUS VIVIDUS Baker

Pericrocotus peregrinus vividus BAKER, Bull. Brit. Orn. Club, vol. 40, p. 114, 1920 (Altaran River, Burma).

Two males and one female, Bangkok, August 18 and October 31, 1924; six marked males (three are probably females), Bo Ploi, Kanburi, September 7–9, 1928; one male, Korat, February 16, 1929; one male, Rayasothon, March 23, 1929; one male, Chantuk, June 14, 1934.

Dr. W. L. Abbott took two males in the Mergui Archipelago (St. Luke Island, January 21, 1900, and Domel Island, January 30, 1904); three males, Tenasserim (Tanjong Badak, January 6 and 8, 1900; Champang, December 20, 1903).

This race has been taken in northern, eastern, western, and southwestern Siam and in Peninsular Siam as far south as Koh Pra Tung, Takuapa Inlet.[9]

Herbert [10] states that it breeds in central Siam in March and April, sometimes as late as June; he gives a description of the nest and eggs.

De Schauensee,[11] in recording it from Chiengmai, states that it is uncommon in the north. Deignan [12] says it is only a winter visitor to Doi Sutep.

The form ranges from eastern Bengal, Burma, and Siam to Cochinchina. A somewhat larger and more brightly colored race occurs in Java, Bali, and Sumatra, and there are other races in India and Ceylon.

PERICROCOTUS IGNEUS IGNEUS Blyth

Pericrocotus igneus BLYTH, Journ. Asiat. Soc. Bengal, vol. 15, p. 309, 1846 (Malacca).

One male, Baugnara, Patani, July 4, 1926.

Dr. W. L. Abbott took an immature male, Trang, March 2, 1899.

The range of the form extends from southern Tenasserim through the Malay States to Singapore. Borneo and Sumatra are included in the range by most authorities, but it seems to me that upon comparison specimens from these islands will prove to be different. A male specimen from the island of Palawan in the United States

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[9] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 250, 1924.

[10] Journ. Siam Soc. Nat. Hist. Suppl., vol. 6, p. 108, pl. 8 (nest), 1923.

[11] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 225, 1934.

[12] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 100, 1936.

National Museum has the reds with a more yellow undertone than the Patani male.

For some reason there are few Siamese records. Robinson [13] records a pair from Bankok Klap, Bandon; Robinson and Kloss [14] state that there is a specimen in Williamson's collection from Bangnara, Patani; de Schauensee [15] received three specimens from Nakon Stritamarat taken May 21 and 25.

PERICROCOTUS ROSEUS ROSEUS (Vieillot)

Muscicapa rosea VIEILLOT, Nouv. Dict. Hist. Nat., ed. 2, vol. 21, p. 486, 1818 (Bengal).

One female, Sikeu, near Korat, February 16, 1926; one male, Khun Tan Mountains, 4,000 feet, November 22, 1928; one female, Doi Angka, 2,000 feet, December 8, 1928; one male, Doi Sutep, February 3, 1932.

Dr. W. L. Abbott collected two males and two females at Champang, Tenasserim, December 21, 1903.

The female from Doi Angka is rather large, wing 92 mm, possibly a young male.

Robinson and Kloss [16] took a female on Puket (Junkseylon), December 19, 1917, and report [17] that W. J. F. Williamson took an immature male at Bangkok, January, 1916; de Schauensee [18] also took a young male at the same place, March 4, and on his second trip to Siam he secured specimens on Doi Sutep, 1,500–2,500 feet, in December, and males at Chiengrai in January [19]; Deignan [20] reports it rather rare on Doi Sutep, at 2,700–3,500 feet; de Schauensee [21] on his third expedition secured a pair at Bua Yai, January 6, 9.

The form has a wide range, occurring from southwestern China and Tonkin, to Siam, Burma, Assam, and southern Tenasserim.

In Siam it is probably only a winter visitor.

PERICROCOTUS DIVARICATUS DIVARICATUS (Raffles)

Lanius divaricatus RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 305, 1822 (Singapore . . . also known in Sumatra).

One female, Bangkok, April 27, 1934.

Dr. W. L. Abbott took three males and one female, Trang, March 24, 1896, January 25, 1897, and January 19, 1899; one male, Telibon Island, Trang, February 25, 1896; and one male, St. Luke Island, Mergui Archipelago, January 19, 1900.

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[13] Journ. Federated Malay States Mus., vol. 5, p. 101, 1915.
[14] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 249, 1924.
[15] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 224, 1934.
[16] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 105, 1919.
[17] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 249, 1924.
[18] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 569, 1928.
[19] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 551, 1930.
[20] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 147, 1931.
[21] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 225, 1934

The gray minivet breeds in Japan and eastern Siberia and migrates south in winter through China, Indo-China, Burma, and Siam to the Philippines, Peninsular Siam, and the Malay States. In Siam it has been found at Bangkok, Paknam, Koh Lak, Trang, and the island of Puket.[22]

Robinson and Kloss [23] state that it is very common in southwestern and Peninsular Siam throughout the winter.

PERICROCOTUS CANTONENSIS Swinhoe

Pericrocotus cantonensis Swinhoe, Ibis, 1861, p. 42 (Canton, China).

One male, Kumpawapi, February 17, 1929.

Robinson and Kloss [24] secured specimens from Nong Kok, Ghirbi, January 5, 1918, and Junkseylon, Peninsular Siam, December, and say that they have two specimens from Chong, Trang, that they had previously listed as *P. cinereus*.[25] De Schauensee [26] lists two specimens from Bangkok taken March 2 and 3; Count Gyldenstolpe [27] took a single specimen at Bang Hue Hom, northern Siam.

This minavet breeds in southern China as far west as Szechwan and migrates in winter to Indo-China, southern Burma, Siam, and down Peninsular Siam as far as Trang.

VOLVOCIVORA MELANOPTERA (Rüppell)

Ceblepyris melanoptera Rüppell, Museum Senckenbergianum, vol. 3, Heft 1, p. 25, pl. 2, fig. 1, 1839 (probably New Holland, error; Burma).

Campephaga avensis Blyth, Catalogue of the birds in the museum Asiatic Society, p. 327, 1852 (Arakan).

Volvocivora intermedia Hume, Stray Feathers, vol. 5, p. 205, 1877 (Tenasserim).

Volvocivora koratensis Kloss, Ibis, 1918, p. 193 (Lat Bua Kao, eastern Siam).

One male and two females, Doi Hua Mot, August 30–September 4, 1934; one adult male, one adult female, and one immature female, Khun Tan Mountains, November 19 and 21, 1928; one immature male and one immature female, Khun Tan, September 4, 1930, February 19, 1932; one immature female, Doi Sutep, December 15, 1928; one immature female, Pang Meton (Doi Nangka), May 4, 1931; one male, Pran, April 3, 1931; one male, Bangkok, January 1, 1925; one male, Hupbon, November 2, 1931; one male and one female, Nong Khor, November 15, 1924, and November 10, 1926; two males and one female, Nong Yang, November 4, 7, 1931; one male and three females, Kao Seming, Krat, October 13, 1928, January 1, 1930; four males and two females, Kao Sabap, January 6, 1930, October 30–November 25, 1933; one immature female, Koh Chang, January 9, 1926; one male,

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[22] Gyldenstolpe, Ibis, 1920, p. 570.

[23] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 250, 1924.

[24] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 106, 1919.

[25] Ibis, 1911, p. 55.

[26] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 570, 1928.

[27] Ibis, 1920, p. 570.

Kao Pae Pan Nam, Lomsak, February 18, 1934; one male, Wang Kien, Kanburi, March 12, 1934.

Dr. W. L. Abbott collected an adult male at Bok Pyin, Tenasserim, February 15, 1900; wing, 130 mm.

The female is generally lighter than the male, but some specimens marked as females are not different from the males. All specimens with barring below, no matter how faint, I believe are young or have not entirely acquired fully adult plumage. All the specimens with some barring below have three or four of the outer primaries beginning with the third or fourth with a large white spot on the inner web toward the base. As the birds become older, they get darker, the wings a deeper black, and the white spot on the inner webs of the primaries seems to disappear. If my supposition is correct that the dark birds represent an age character, then it must take several molts to reach the fully adult plumage. A female from Nong Yang (no. 330940) is much lighter than the fully adult bird, the wings are black but have a grayish wash on the outward webs of the primaries, and the white spot on the inner webs of the primaries commences on the second, there is a narrow white interrupted eye ring; and there are indications of faint barring on the belly, I presume it is a specimen in its second year. All the above specimens have the under tail coverts buffy white, except two males (nos. 330941 and 333999) from Hupbon and Kao Sabap, and they have them light grayish tipped with white.

Ten males in the above series measure: Wing, 117–126 (122.8) mm.

The United States National Museum contains the type of *Volvocivora koratensis* Kloss. It is an immature female of the present species with faint bars on the belly and the white patch on the inner web of the outer primaries beginning with the third; the lower mandible is light colored.

The National Museum also possesses the male from the Raheng district recorded by Chasen and Kloss [28] as *Lalage fimbriata indochinensis* Kloss. It is a gray bird, with the wing washed outwardly with gray and the middle tail feathers gray, black toward the tip; the outer primaries have the white patch on the inner web toward the base, commencing with the second; there are no bars on the belly. I take it to be a bird collected after its second or third molt. Its wing measures 118 mm; this is too much for the *fimbriata* group, and so I place it here for the present.

It may be that two forms are represented in the above series, but I think it best to regard the differences noted as age rather than geographic.

Lord Rothschild [29] says he has received *V. melaschistos* and *V. melanoptera* from the same localities and regards them as separate species for the present, and I am doing the same. One may be migratory and the other resident.

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[28] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 174, 1928.

[29] Nov. Zool., vol. 33, p. 300, 1926.

V. melanoptera ranges from northern Burma to Siam, French Indo-China, and southern China. In Peninsular Siam it has not been obtained south of Naihut, near Langsuan, unless Müller's record from Junkseylon of *V. avensis* belongs to this form, as recorded by Robinson and Kloss.[30]

In southern China the species is migratory, according to La Touche,[31] and in India and northern Siam it may be also; it breeds in Tenasserim, however.

VOLVOCIVORA MELASCHISTOS Hodgson

Volvocivora melaschistos Hodgson, Indian Rev., vol. 1, p. 328, 1837 (Nepal).

One male, Khun Tan, February 13, 1932.

This specimen is even darker than a typical bird from the Himalayas. Above it is a shining greenish black, grayish on the rump, and darker on the wings and tail; below it is dusky neutral gray, slightly paler on the under tail coverts; wing, 124 mm.

Possibly this species is only a migrant. Chasen and Kloss [32] record a male and female from Doi Sutep, 4,600 feet; Deignan [33] says it is fairly common on Doi Sutep from 2,000 to 4,600 feet. The species ranges from the Himalayas to eastern Assam, the plains of India from latitude 16° N., Burma, and northern Siam.

VOLVOCIVORA FIMBRIATA CULMINATA (Hay)

Ceblepyris culminatus Hay, Madras Journ. Lit. and Sci., vol. 13, p. 157, 1844 (1845) (Malacca).

Dr. W. L. Abbott took an adult male, Trang, February 23, 1899. He gives the soft parts as: Iris dark brown; bill black; feet dull black.

This specimen is lighter than two males from Sumatra, two from Borneo, and one from Siberut Island; the last is not quite adult and is somewhat lighter than the Sumatra-Borneo birds, which are adult.

The two Sumatran males are much darker than the Trang male, one having the pileum, cheeks, and throat blackish, the other a deep neutral gray. The Trang male is neutral gray, somewhat lighter on the belly and rump.

The male from Trang measures: Wing, 104; tail, 73; culmen, 16 mm. Two males from Sumatra: Wing, 92–97; tail, 63–65; culmen, 13.5–15 mm. Two males from Borneo: Wing, 94–95. 5; tail, 65–66; culmen, 15.5–16 mm. One male from Siberut Island, western Sumatra: Wing, 103; tail, 70; culmen, 15 mm.

In color the two Bornean males are similar to the lighter of the Sumatran males.

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[30] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 253, 1924.

[31] A handbook of the birds of eastern China, vol. 1, pt. 3, p. 202, 1926.

[32] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 242, 1932.

[33] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 101, 1936.

From the above material, birds from Sumatra, Borneo, and Siberut appear different from the mainland form and should be known as *V. f. schierbrandi* (Pelzeln).

V. f. culminata can be distinguished from *V. neglecta* by the tips of the three outer tail feathers being narrowly tipped with gray (on the outer only 6 mm long), while in the latter the tips are white and on the outer feather about 12 mm long.

The Trang specimen is the northernmost record in the Peninsula. Robinson and Kloss [34] report a male from Bangnara, Patani, collected by Aagaard, July 21.

This form ranges from Singapore north to Trang. *V. f. fimbriata* (Temminck), a darker form, is confined to Java and Bali.

VOLVOCIVORA NEGLECTA NEGLECTA Hume

Volvocivora neglecta Hume, Stray Feathers, vol. 5, p. 203, 1877 (southern Tenasserim).

One male, Bukit, Patani, January 25, 1931; one male, Kao Luang, Nakon Sritamarat, July 17, 1928; one male, Tha Lo, Bandon, September 22, 1931.

Dr. W. L. Abbott collected three males and two females, Trang (Prahmon, March 5 and 13, 1896; Tyching, May 22, 1896; Kantany, January 16, 1897; Trang, December 26, 1898).

The six males have a wing measurement of 98–105 (102) mm.

This form varies from slate gray to deep gull gray; the wings and tail are black, the latter with a white tip on the outer feathers about 12 mm long decreasing toward the central pair.

The lighter-colored specimens appear younger, as a light specimen is molting into a darker plumage.

In my opinion this race does not belong to the *fimbriata* group.

It ranges from southern Tenasserim through Peninsular Siam to the northern Malay States.

LALAGE NIGRA NIGRA (Forster)

Turdus niger Forster, Indische Zoologie, p. 41, 1781 (India; restricted to Singapore).

Lalage nigra brunnescens Baker, Bull. Brit. Orn. Club, vol. 44, p. 13, 1923 (Klang, Malay Peninsula).

One adult male (unsexed) and three immature males, collected by C. Boden Kloss at Tanjong Kalong, Singapore, March 4, May 23, and May 29, 1900, were received from Dr. W. L. Abbott.

The form ranges from Penang in the west to Singora on the east coast of Peninsular Siam south to Singapore, the Nicobars, Sumatra, west and middle Java.

Williamson [35] has recorded it from Singora and Patani. Apparently it is not a common bird in Siam.

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[34] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 254, 1924.

[35] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 60, 1916.

GRAUCALUS JAVENSIS SIAMENSIS Baker

Graucalus macei siamensis BAKER, Bull. Brit. Orn. Club, vol. 38, p. 69, 1918 (Mi-nam Kabren, Siam).

One female, Doi Hua Mot, September 4, 1934; one female, Doi Phra Chao (Meru Sawan), August 3, 1934; three males and one female, Khun Tan, 4,000 feet, August 25, 1930, February 25, 1932; one male, Udon, February 16, 1929; three males, Muek Lek, April 26, 1933; one male and one female, Muang Kanburi, April 14 and September 11, 1928; one female, Bo Ploi, Kanburi, September 8, 1928; two males and four females, Pak Chong, February 10 and August 22, 1925, May 2, 1926; one not sexed, Tha Chang, Pak Chong, March 14, 1927; one male, Ban Tarn Dam, March 7, 1930; one female, Nong Khor, November 11, 1926; one male, Pang Sok, August 18, 1926; one male, Knong Phra, April 15, 1929; one male, Nakon Sritamarat, March 11, 1929.

In the adult male the nasal bristles, the loral streak, and a narrow line on the chin are black; the remaining plumage of the body is dark gull gray; belly and crissum white; wings blackish edged outwardly with color of the back; middle tail feathers like the back; outer tail feathers black tipped with grayish white, increasing in extent outwardly. The female is like the male, except she is of a lighter gray below and lacks the black on the lores, chin, and nasal bristles, but the lores are somewhat darker than the head or throat. Only the immature of both sexes are lightly barred on the breast and belly with narrow bars of dark gull gray or even lighter.

Eight of the adult males measure: Wing, 168–181 (173.6) mm.

In the southern Malay States occurs a race that is darker, especially about the throat; it also has the white on the belly much restricted and almost confined to the crissum. This race is named after the Larut Hills—*G. j. larutensis* Sharpe. It may extend into southern Peninsular Siam.

There is a male specimen (U. S. N. M. no. 304311) from near Phong Saly, French Laos, taken June 11. It is in worn plumage and resembles *siamensis* but is darker above and lighter below with the whole throat dark like *larutensis;* it is larger than the latter, however. This specimen I have assigned to *G. j. larvivorus*, the Hainan form. It is certainly not *G. j. rex-pineti*, with which it has been compared.

G. j. siamensis ranges from western Yunnan through Assam and Burma to Siam and southern Indo-China; in Peninsular Siam it occurs as far south at least as Nakon Sritamarat, where Dr. Smith took a male recorded above.

GRAUCALUS SUMATRENSIS MESSERIS (Oberholser)

Artamides sumatrensis messeris OBERHOLSER, Journ. Washington Acad. Sci., vol. 16, p. 517, 1926 (Trang, Lower Siam).

Dr. W. L. Abbott collected the type and one additional male and two females in Trang, March 2 and 3, 1899; two females, on Pulo Tioman, October 14, 1900; and three males on Pulo Bulan, Rhio Archipelago, March 17 and 19, 1907.

This species is much darker than the *javensis* form group, without the black frontal bristles, chin, or lores; the male deep neutral gray; the female similar, but the breast and belly with black and white bars of about equal width.

Dr. Richmond recognized this race many years ago and picked out a type but apparently never described it. The form is doubtfully separable from *sumatrensis*, of which I have seen no authentic specimens.

Family DICRURIDAE: Drongos

DICRURUS ANNECTANS (Hodgson)

Buchanga annectans HODGSON, Indian Rev., vol. 1, p. 326, 1836 (Nepal).

Two immatures, Lat Bua Kao, August 10, 1929; one adult male, Pak Chong, April 27, 1926; one adult male, Koh Tao, December 31, 1926; three immature males and one immature female, Kao Soi Dao, Trang, December 20–27, 1933.

Dr. W. L. Abbott collected six adult males, one immature male, and one immature female in Trang (Telibon Island, February 28, 1896; Prahmon, April 3, 13, 1896; Lay Song Hong, December 14, 30, 1896; Trang, January 27 and February 4, 1897); one male, the Dindings, Straits of Malacca, April 14, 1900; one male, Champang, Tenasserim, December 14, 1903. He gives the soft parts as: Iris dull or dark red; bill and feet black.

This species breeds in the foothills of the Himalayas from Nepal to Assam, Chin and Kachin Hills, Shan States, and Karen Hills, Tenasserim; it migrates south through Laos, Annam, Cambodia, and Siam, and Peninsular Siam to the Malay States, Sumatra, Banka, Java, and Borneo.

In Siam proper it seems to be rare, as there are few records, but in the Malay Peninsula it is not uncommon in the winter months, especially on islands off the coast. Robinson and Kloss[36] say that out of the immense series of birds that have passed through their hands (from the Malay Peninsula) not one is dated between April 20 and September 22; it is a coastal bird and not common inland. Robinson[37] records it from Klong Menao, southeastern Siam. The scarcity or lack of records from Siam proper may be due to the fact that most of the collecting done there is at a time when the bird is already on its winter range farther south. Diegnan[38] reports it common in the lowlands of Nan.

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[36] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 341, 1924.

[37] Ibis, 1915, p. 761.

The species can readily be distinguished from the other black drongos of this genus occurring in Siam by its heavier bill and less deeply forked tail.

DICRURUS MACROCERCUS CATHOECUS Swinhoe

Dicrurus cathoecus SWINHOE, Proc. Zool. Soc. London, 1871, p. 377 (China, Hainan, and Formosa).

Six males and four females, Bangkok, October 2, 4, 1924, October 27 and November 2, 1925, November 30, 1926; one male, Pol, Korat, February 16, 1929.

This form breeds in Manchuria, northern China, southern China, and the mountains of Szechwan and Yunnan in western China. It is migratory in the northern part of its breeding range but resident in the south. It winters in southern China, Indo-China, Siam, and Burma.

Gyldenstolpe[39] says it is common in every part of Siam as far south as Koh Lak; Robinson and Kloss[40] record it from Namchuk and Namoh, Peninsular Siam, and Koh Lak, the latter specimen taken April 3. It probably occurs all over Siam in the winter, but it is hard or impossible to tell what records belong to it and what belong to the resident form.

Five winter males from Bangkok measure: Wing, 140–147 (143.7); tail, 136.5–145 (140); middle tail feathers, 105–111 (107.3); culmen, 21.5–22 (21.7) mm. Five males from China: Wing, 138.5–149 (143.9); tail, 130–147.5 (135.8); middle tail feathers, 102.5–115 (110.3); culmen, 20–22.5 (21.4) mm.

I much doubt that it breeds in Burma, as recorded by Stuart Baker.[41]

In a rather large series of this form examined from China, I have never seen in the adult a white rictal spot.

DICRURUS MACROCERCUS THAI Kloss

Dicrurus macrocercus thai KLOSS, Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 208, 1921 (Koh Lak, southwestern Siam).

The United States National Museum possesses a pair of this form collected by C. Boden Kloss, the male at Koh Lak and the female at Tachin.

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[38] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 169, 1936.

[39] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 20, 1916.

[40] Journ. Nat Hist. Soc. Siam, vol. 5, p. 341, 1924.

[41] The fauna of British India, Birds, ed. 2, vol. 2, p. 358, 1924.

It has a shorter wing and culmen than the migrant race, *D. m. cathoecus* and the tail with a deeper fork. The male measures: Wing, 128; tail, 144.5; middle tail feathers, 99; culmen, 18.5 mm. The female: Wing, 133; tail, 156; middle tail feathers, 95; culmen, 18 mm.

Just what range it has is not well known. Robinson and Kloss [42] say they have it from southern Tenasserim, southwestern and central Siam, and southern Annam. De Schauensee [43] records it from Bangkok and Chiengmai.

The bird occurring in Java, it seems to me, belongs to a distinct species. It is bluish black rather than greenish black and is separated from its nearest relative to the north by a wide tract of country. It should stand as *D. javanus* Kloss and is confined to Java.

DICRURUS LEUCOPHAEUS DISTURBANS Baker

Dicrurus leucophaeus disturbans BAKER, Nov. Zool., vol. 25, p. 293, 1918 (Amherst, Tenasserim).

Dr. Smith took a single female at Nam Chi Hua, Burma, January 14, 1933.

The United States National Museum possesses also two males from the Raheng District, western Siam. They are from the collection made by Gairdner and reported upon by Chasen and Kloss,[44] who have assigned them to *D. l. mouhoti*, but they are considerably smaller than that form and somewhat lighter in color.

The two Raheng males measure: Wing, 127.5–132; tail, 123–126.5; middle tail feathers, 90.5–93; culmen, 21.5–22 mm. The female from Burma: Wing, 131; tail, 132.5; middle tail feathers, 97.5; culmen, 21 mm.

Stuart Baker [45] gives the range as the Malay Peninsula, Peninsular Burma, and Siam as far north as Bangkok.

The three birds recorded by Robinson and Kloss [46] from Koh Sak, Hat Sanuk, and Nongkae as *D. l. mouhoti*, evidently belong here. The measurement of the wing given by them is small.

I do not know upon what basis Stuart Baker included the Malay Peninsula in the range of this form.

DICRURUS LEUCOPHAEUS HOPWOODI Baker

Dicrurus leucophaeus hopwoodi BAKER, Nov. Zool., vol. 25, p. 294, 1918 (Dacca).

One male, summit of Doi Sutep, December 15, 1928.

Dr. Smith took only this one specimen in northern Siam. It has been compared with a series from Yunnan and agrees quite closely.

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[42] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 342, 1924.

[43] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 226, 1934.

[44] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 181, 1928.

[45] The fauna of British India, Birds, ed. 2, vol. 2, p. 360, 1924

[46] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 342, 1924.

It measures: Wing, 146; tail, 152; middle tail feathers, 102; culmen, 23 mm. Six males from northwestern Yunnan measure: Wing, 143.5–157 (149.6); tail, 145–165 (155.6); middle tail feathers, 95–113.5 (105.7); culmen, 22–23 (22.7) mm. Seven females from northwestern Yunnan and one from southwestern Szechwan: Wing, 145–153 (147.3); tail, 141–164.5 (153.2); middle tail feathers, 98–110 (102.4); culmen, 21.5–24 (23) mm.

The form has been taken on Doi Sutep by several collectors. Robinson and Kloss[47] record it from Namchuk, Pakchan, and Koh Lak, but the measurement of the wing of one of the specimens looks conspicuously small.

This is the largest and darkest of the gray drongos occurring in Siam. It breeds in the mountains of southwestern Szechwan, northwestern Yunnan, northern Burma, Assam, and Bengal, and migrates to Tonkin, northern Laos, Annam, and Siam to winter.

DICRURUS LEUCOPHAEUS MOUHOTI (Walden)

Buchanga mouhoti WALDEN, Ann. Mag. Nat. Hist., ser. 4, vol. 5, p. 220, 1870 (Cambodia).

One male, Huey Lao, December 24, 1932; one male, Song Kwe Valley, January 20, 1933; two females, Khun Tan Mountains, 4,000–4,400 feet, November 21, 22, 1928; one female, Khun Tan, 3,000 feet, February 14, 1932; one female, Pang Meton (Doi Nangka), May 2, 1931; four males, Kao Seming, Krat, October 12, 13, 1928, December 29, 1929–January 1, 1930; two males and four females, Koh Chang, January 4–11, 1925, March 10, 11, 1930.

Dr. W. L. Abbott took two females in Tenasserim (Tanjong Badak, March 15, 1900 and Maliwun, March 25, 1900). He gives the soft parts as: Iris red or orange-brown; bill and feet black.

The United States National Museum possesses also one male, Koh Chang, one male, Ok Yam, and one female, Koh Klum, southeastern Siam; two males and two females, southern Annam; and one male, east-northeast of Phong Saly, Laos.

The females are darker than the males.

The above series averages lighter and somewhat smaller than *hopwoodi*, but the differences are not great.

Two males from northern Siam measure: Wing, 140–141; tail, 150–151; middle tail feathers, 93.5–95; culmen, 21–22. Five males from southeastern Siam, two from southern Annam, and one male from Laos: Wing, 138–146.5 (141.4); tail,[48] 138–149 (143.5); middle tail feathers, 95–101 (97.2); culmen, 21.5–24 (22.9) mm. Four females from northern Siam: Wing, 136.5–140 (138); tail, 136–143 (138.3); middle tail feathers, 95.5–98.5 (96.6); culmen, 21.5–23.5 (22.5) mm.

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[47] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 343, 1924.

[48] The tails in the specimens from southern Annam and Laos are much worn and are not included.

Four from southeastern Siam and two from southern Annam: Wing, 133.5–140 (137); tail, 125–140 (129.4); middle tail feathers, 95–101.5 (97.3); culmen, 20–23 (21.8) mm.

The two specimens collected by Dr. Abbott in Tenasserim are too light colored above for *hopwoodi* and too large for *disturbans* and are placed here. They measure: Wing, 137.5 and 144.5 mm.

This form was originally described as being darker above and below than *leucophaeus*, whereas the reverse is the case. Since the type may have been an immature specimen, a reexamination of it would be desirable.

This is probably the resident form in northern, eastern, and southern Siam, *hopwoodi* being only an erratic winter visitor. I rather think that the majority of the specimens recorded by de Schauensee [49] as *hopwoodi* really belong to this form. The wing measurements given are too small for *hopwoodi*. The records of the forms are so involved that without the specimens they are founded upon it would only lead to error to try to allocate them.

This drongo ranges from central and southern Annam to Cochinchina, southern Laos, Cambodia, and northern, eastern, and southeastern Siam.

DICRURUS LEUCOGENIS LEUCOGENIS (Walden)

Buchanga leucogenis Walden, Ann. Mag. Nat. Hist., ser. 4, vol. 5, p. 219, 1870 (Nagasaki, Japan, error; China).

Buchanga leucogenys cerussata Bangs and Phillips, Bull. Mus. Comp. Zool., vol. 58, p. 302, 1914 (Ichang, Hupeh, China).

One male and one female, Ban Nam Kien, Nan, April 18, 21, 1930; one female, Ban Tarn Dam, near Sriracha, March 5, 1930; one female, Sriracha, February 4, 1927; one male, Hupbon, November 3, 1931; two females, Kao Seming, Krat, October 11, 15, 1928; one male, Kao Sabap, November 4, 1933.

Dr. W. L. Abbott collected one female, Tanjong Badak, Tenasserim, March 1900. He gives the soft parts as: Iris red; bill and feet black.

The male from Hupbon and the male from Kao Sabap are light colored like a male from Ichang and four males from Szechwan in the United States National Museum. All the females are darker, with the white facial area much restricted. The females examined from China or elsewhere are dark like the Siamese specimens. The female from Ban Tarn Dam, March 5, is molting from a darker into a somewhat lighter plumage, but the new plumage is still a little darker than the adult male.

Bangs and Phillips named the light-colored form as cited above, but I think there is not much doubt that Walden described the light-colored bird also and that his type came from China and not from Japan.

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[49] Proc. Acad. Nat. Sci. Philadelphia, vol 86, p. 226, 1934.

Beside the specimens collected by Dr. Smith and Dr. Abbott, the United States National Museum possesses a female from Koh Kut Island, a female from Ok Yam, and an unsexed specimen from Salanga, in addition to a small series from western and southern China.

The species breeds in China and migrates to Indo-China, Siam, and Peninsular Siam to winter.

Robinson and Kloss [50] state that it is only a winter visitor to Peninsular Siam. De Schauensee [51] records it from Petrui and Sriracha. Apparently there are no records from northern Siam so it probably comes into the country from the east or southeast.

The male is very light gray (gull gray); only the forehead, lores, and chin are blackish; the region around the eye and ear coverts is white; and the tail above is light gray to the tip. The female is darker; the white around the eye restricted; the ear coverts and below the eye washed with drab-gray; the tail above often dusky at the tip.

Two males from Siam and six from China measure: Wing, 140–151 (148.5); tail, 130–142 (132. 9); middle tail feathers, 99–108.5 (104.6); culmen, 21–22.5 (22) mm. Five females from Siam, one from Tenasserim, and two from China: Wing, 137.5–146 (142.7); tail, 127–141 (135); middle tail feathers, 100–109 (104.5); culmen, 20.5–22.5 (21.3) mm.

DICRURUS LEUCOGENIS SALANGENSIS Reichenow

Dicrurus leucogenys salangensis Reichenow, Nomenclator Musei Heineani ornithologici, p. 69, 1890 (Insula Salanga).

One male and two females, Bangkok, October 5, 15, and 27 (in three different years); one male and one female, Nong Yang, October 20, 24, 1931; one male, Hupbon, November 5, 1931; one male, Kao Seming, Krat, October 15, 1928; one female, Kao Sabap, October 30, 1933.

Dr. W. L. Abbott collected one female Lay Song Hong, Trang, December 2, 1896 and one male, Domel Island, Mergui Archipelago, February 27, 1900. He gives the soft parts as: Iris orange-brown (male), dark brown (female); bill and feet black.

This is a much darker bird than *D. l. leucogenis*. The male is deep neutral gray; the forehead and chin blackish, but the former not contrasting conspicuously with the crown, which is darker than the back; the light area surrounding the eye contracted and the region below the eye and ear coverts washed with drab; the tail dusky above for some distance from the tip. In the female the white is confined to the lores, the ear coverts and subocular region being gray. There is one female from Nong Yang in which the region around the eye is only a little lighter gray than the throat.

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[50] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 345, 1924.

[51] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 226, 1934.

In the female from Trang and the male from Domel Island the region surrounding eye and lores is only a little lighter than the surrounding region; the throat and chest have a dusky wash; and the crown and back are darker than in the southeastern Siamese specimens. They may not be the same but evidently are the form upon which the name rests, which was described as "*regione parotica cinerea nec alba.*" If the specimens from southern and southeastern Siam should prove separable, the name *D. l. meridionalis* Hachisuka[52] would probably be available. *D. l. salangensis* is so widely different from *D. l. leucogenis* that it is really debatable whether it would not be better to give it specific rank.

Whether this is a resident form or only a migrant from farther north is not known, nor has its breeding range been discovered. It is the commoner of the two forms found in Siam during winter.

Three males from Siam and one male from Domel Island measure: Wing, 135–154 (138.7); tail, 122–129 (126.8); middle tail feathers, 98–103 (97.5); culmen, 21–22 (21.5) mm. Five females from Siam: Wing, 129–141.5 (137.4); tail, 122–130 (124.3); middle tail feathers, 94–103 (98); culmen, 21–22 (21.4) mm. It is evidently a smaller bird with a shorter tail than *D. l. leucogenis.*

CHAPTIA AENEA AENEA (Vieillot)

Dicrurus aeneus Vieillot, Nouv. Dict. Hist. Nat., ed. 2, vol. 9, p. 586, 1817 (Bengal).

Two males, Doi Nangka, November 17, 21, 1930; two males and two females, Pang Meton (Doi Nangka), April 30 and May 3, 1931; one female, Khun Tan, August 26, 1930; two males, Kao Pae Pan Nam, February 19, 1934; one male, Hin Lap, October 3, 1932; one male and two females, Pak Chong, November 26, 1929, June 20, 1934; one male, Sakeo, near Krabin, May 8, 1928; one female, Ban Han, Udon, March 17, 1929; one female, Ban Sadet, Sriracha, May 27, 1925; one female, Huey Yang, Sriracha, August 4, 1932; three males, Klong Yai, Sriracha, July 28, 1932; one male and one female, Nong Yang, November 7, 1931; one female, Ban Tarn Dam, March 7, 1930; one male, Chantabun, May 27, 1929; two males and three females, Kao Sabap, November 4–19, 1933; three males and three females, Kao Seming, Krat, October 13, 16, 1928, January 1, 1930. Dr. Smith also took a male in the Kiu Pang Valley, Salwin District, Burma, January 28, 1933.

Dr. W. L. Abbott took a male at Maliwun, Tenasserim, March 24, 1900.

Specimens from eastern and southeastern Siam in measurements certainly belong with the northern form. How far south to the southwest the present form goes I do not know, but probably to the neighborhood of the Isthmus of Kra. A female from the Raheng District certainly belongs to the northern form.

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[52] Bull. Brit. Orn. Club, vol. 47, p. 56, 1926.

Six males from eastern Burma (1) and northern Siam (5) measure: Wing, 120–126.5 (123.5); tail, 110–121 (115.8); culmen, 19–20.5 (19.9) mm. Nine males from eastern and southeastern Siam: Wing, 120–128.5 (123.8); tail, 110.5–127 (118.9); culmen, 18–21 (19.5) mm.

I cannot tell whether the bird of the Himalayas is the same as that of southern Burma, as no specimens are available from that part of its range for comparison. Stuart Baker's[53] highest measurements are certainly higher than anything I have measured from Siam.

The single male from Tenasserim seems to belong to the same form as that of northern Siam. It measures: Wing, 121; tail, 112; culmen, 18.5 mm.

The form ranges all over Siam proper apparently. Outside of Siam it is found from eastern Bengal to Burma and Indo-China.

CHAPTIA AENEA MALAYENSIS Blyth

Chaptia malayensis BLYTH (A. Hay MS.), Journ. Asiat. Soc. Bengal, vol. 15, p. 294, 1846 (Malacca).

Two males and one female, Sichol, Bandon, September 3, 1929, May 15, 24, 1930.

Dr. W. L. Abbott collected one male, Prahmon, Trang, April 4, 1896, and one male, Tyching, Trang, May 28, 1896. He gives the soft parts as: Iris dark brown; bill and feet black.

The above specimens agree fairly well with a small series of six males from eastern Sumatra.

The four males from Peninsular Siam measure: Wing, 117–120.5 (118.8); tail, 100–110 (107.5); culmen, 18–20 (18.8) mm. The six males from Sumatra: Wing, 110–118.5 (114.3); tail, 93[54]; culmen, 17.5–18 (17.8) mm.

The United States National Museum possesses also an immature male, apparently of this form, from southeastern Borneo.

The form ranges from Borneo, Sumatra, and the Malay States northward through Peninsular Siam to about the Isthmus of Kra. Robinson and Kloss[55] record it from Tasan, which must be about its northern limit. The range given by Stuart Baker[56] seems to me impossible.

Birds in worn plumage become more or less metallic violet above, while specimens in fresh plumage are steely blue.

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[53] The fauna of British India, Birds, ed. 2, vol. 2, p. 368, 1924.

[54] Five of the specimens are in molt, and the tails in four are not measured.

[55] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 346, 1924.

[56] The fauna of British India, Birds, ed. 2, vol. 2, p. 369, 1924.

CHIBIA HOTTENTOTTA HOTTENTOTTA (Linnaeus)

Corvus hottentottus Linnaeus, Systema naturae, ed. 12, p. 155, 1766 (Cape of Good Hope, error; south-central Siam, as fixed by Kloss [57]).

Three males and three females, Ban Nam Kien, Nan, April 18–22, 1930; one male, Muang Kanburi, September 10, 1928; one male, Kanburi, September, 1929; one female, Wang Kien, near Kanburi, March 13, 1934; two females, Bangkok, December 31, 1924, December 2, 1925; two males, Lomkao, February 21, 1934; five males, five females, and two young, Pak Chong, February 22, 1924, May 6, 7, 1925; March 2, April 29, May 2–9, and December 19, 1926, December 8, 1929, June 21, 1934; one female, Lam Klong Lang, Pak Chong, June 14, 1925; two males, Tha Chang, Pak Chong, March 20, 22, 1927; one male and one female, Sikeu, near Korat, February 17 and March 2, 1926; one male, Chantuk, June 7, 1934; one male, Lat Bua Kao, August 10, 1929; one male and one female, Muek Lek, April 25, 1933; one male and one female, Knong Phra, April 13, 15, 1929; one male, Sakon Nakon, March 10, 1929; one male, Kao Sabap, November 20, 1933; two males, Koh Chang, January 9, 13, 1926.

Dr. W. L. Abbott collected one male and eight females, Bok Pyin, Tenasserim, February 13–17, 1900. He gives the soft parts as: Iris dark red, reddish brown, or dark brown; bill and feet black.

This is the resident form, and it apparently occurs all over Siam proper, but how far south it extends in the southwest is not well known.

Dr. Smith took a pair of half-grown young at Pak Chong, May 9, and an older immature at Lam Klong Lang, June 14. A female taken at Bangkok, December 31, has the chin, part of the forehead and crown, all the greater wing coverts on the left wing, and the majority of the greater wing coverts on the right wing white.

This form has an average shorter wing but longer and heavier bill than *C. h. brevirostris*.

Ten males from Siam measure: Wing, 161–175 (167.4); tail, 129–145.5 (137.6); culmen, 35–37.5 (35.8) mm. Ten females from Siam: Wing, 152–167 (159.3); tail, 126–142 (134); culmen, 32.5–36 (34) mm.

The form ranges from the Indian Peninsula eastward to Siam and Indo-China. Deignan [58] says that in the Chiengmai region it seems to be present in cold weather in the dry forest up to 2,500 feet; de Schauensee [59] found it not very common on the lowlands and foothills of northern Siam. Dr. Smith secured it only at Ban Nam Kien in the northern part of the country. The majority of his specimens come from the central, eastern, and southeastern part of the country. Apparently it has not been recorded from Peninsular Siam.

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[57] Journ. Federated Malay States Mus., vol. 10, p. 223, 1921.

[58] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 147, 1931.

[59] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 226, 1934.

CHIBIA HOTTENTOTTA BREVIROSTRIS Cabanis

Chibia brevirostris CABANIS, Museum Heineanum, Heft 1, p. 112, 1850 (China).

One male, Doi Nangka, November 10, 1930.

The chief difference between the resident and winter visitant form of this drongo is the shorter and slenderer bill of the latter.

The Doi Nangka male measures: Wing, 165; tail, 135.5; culmen, 33.5 mm.

Eight males from China measure: Wing, 166–181 (171.9); tail, 135–154 (138.3); culmen, 30–34.5 (32.6) mm. Eight females from China: Wing, 161–175 (168.2); tail, 131–145 (138.2); culmen, 31–35 (32) mm.

The form breeds all over China and migrates south to winter, but just how far is not definitely known. So far only Tonkin and Siam have been recorded.

De Schauensee [60] says that this form replaces the typical one in the highlands of northern Siam. His specimens were all taken on Doi Sutep, 5,500 feet, in the latter part of December. On his third expedition [61] he took two males at Chiengdao, 4,600–5,000 feet, January 12, 14, and a female at Prakanong, in the lowlands of central Siam, January 26. Deignan [62] says that it appears on the summit of Doi Sutep in October.

BHRINGA REMIFER LATISPATULA de Schauensee

Bhringa remifer latispatula DE SCHAUENSEE, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 475, 1929 (Doi Sutep, northern Siam).

One male and three females, Khun Tan, 4,000 feet, October 20, 22, 1929, August 30, 1930, February 19, 1932; one male and one female, Khun Tan Mountains, 3,000–4,300 feet, May 12, 18, 1933; one female, Sobpung, December 21, 1932; one male, Doi Nangka, November 19, 1930; one male and one female, Pang Meton (Doi Nangka), May 1, 3, 1931; three females, Doi Hua Mot, August 13–24, 1934.

A topotypical specimen of *B. r. tectirostris* has not been available for examination, but as de Schauensee [63] still believes his race to be valid, I recognize it also.

Only three males and four females in the above series have the outer tail feathers suitable to measure. The three males measure: Wing, 139–144 (141.3); outer tail feather, 498–500 (498.7); spatula, 87–101 (95.2); middle tail feathers, 120–124 (121.7); culmen, 20.5–21.5 (21) mm. Four females: Wing, 130–137 (133.9); outer tail feather, 335–385 (365); spatula, 80–90 (85.2); middle tail feathers, 110–120 (116); culmen, 20–21.5 (20.8) mm. These measurements indicate a bird with a longer tail and rackets than *B. r. tectirostris*, as claimed by the describer.

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[60] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 553, 1930.

[61] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 227, 1934.

[62] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 148, 1931.

[63] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 227, 1934.

The range is not well known, but it occurs in northern Siam and probably the southern Shan States of Burma and in northern Tonkin. Gyldenstolpe[64] records it from Doi Par Sakeng and Khun Tan; de Schauensee[65] from Doi Sutep, 2,500–4,000 feet, and Chiengsen; and on his third expedition[66] from Chiengmai and Chiengdao; Lowe[67] records it from Umpang and farther eastward; Deignan[68] says that on Doi Sutep it occurs in the evergreen forest above, 2,500 feet and is increasingly common toward the summit. Evidently it is a highland bird.

BHRINGA PERACENSIS PERACENSIS Baker

Bhringa remifer peracensis Baker, Bull. Brit. Orn. Club., vol 39, p. 18, 1918 (Telom, Perak-Pahang border).

This group can easily be distinguished from the *remifer* group by having the racket extending along the shaft for a much longer distance and tapered off basally, making a long tapering racket; it is narrower also. This great and fundamental difference, in my opinion, is more than racial when it is considered that there is a long stretch of country between the *remifer* and *peracensis* groups in the south and the *remifer* group in the north and the *peracensis* group in southeastern Siam, where the genus apparently does not occur.

B. p. peracensis occurs in the mountains of the Malay States and western Siam, where two males have been recorded by Chasen and Kloss[69] from the Raheng District. These specimens should be reexamined carefully, as they are out of its known range.

One unsexed specimen of *peracensis* from Selangor measures: Wing, 128; outer tail feather, 470; middle tail feathers, 107; racket, 173; culmen, 20.5 mm. One male of *lefoli* from southeastern Siam: Wing, 135; outer tail feather, 507; middle tail feathers, 104; racket, 265 mm; tip of bill broken. Four females (*lefoli*) from southeastern Siam: Wing, 123–130.5 (128); outer tail feather, 295–393 (364.5); middle tail feathers, 106–115.5 (110.9); racket, 154–194.5 (172.6); culmen, 19–21 (20). Three females from southern Annam: Wing, 133–135 (134); outer tail feather, 440;[70] middle tail feather 116.5–126.5 (120.7); racket, 148;[70] culmen, 20–21 (20.5) mm.

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[64] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 22, 1916.

[65] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 553. 1930.

[66] Proc. Acad. Nat. Sci., Philadelphia, vol. 86, p. 227, 1934.

[67] Ibis, 1933, p. 275.

[68] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 148, 1931.

[69] Journ. Siam Soc. Nat. Hist Suppl., vol. 7, p. 181, 1928.

[70] Only one measured.

BHRINGA PERACENSIS LEFOLI Delacour and Jabouille

Bhringa remifer lefoli Delacaur and Jabouille, Bull. Brit. Orn. Club, vol. 48, p. 133, 1928 (Bokor, 1,000 meters, southern Cambodia).

One male and one female, Kao Kuap, Krat, December 25, 26, 1929; two females, Kao Sabap, 500 meters, November 17, 24, 1933.

These two specimens have been compared with an unsexed specimen of *B. p. peracensis* from Gunong Mengkuang Lebah, Selangor. The metallic tips to the feathers of the upper and lowerparts of the latter are steely or purplish blue rather than the coppery green of the Siamese specimens. The web of the racket does not extend so far along the shaft in *B. p. peracensis;* in other words, the racket is shorter.

The United States National Museum has also a female of this form from Klong Menao and three females from southern Annam (Dran and Dalat) that I would place here provisionally; they do not seem to belong to the Malay form. The range of *B. p. lefoli* would then be southeastern Siam, southern Laos, and southern Annam.

DISSEMURUS PARADISEUS PARADISEUS (Linnaeus)

Cuculus paradiseus Linnaeus, Systema naturae, ed. 12, p. 172, 1766 (Siam; Kloss[71] restricts it to the region between Ayuthia and the head of the Gulf).

Dissemurus paradiseus mallomicrus Oberholser, Journ. Washington Acad. Sci., vol. 16, p. 518, 1926 (Hastings Island, Mergui Archipelago).

Three males, one female, and one unsexed, Pran, May 27, June 1, 1928, April 2, 3, 1931; one male, Rajaguri, April 10, 1926; four males and two females, Muang Kanburi, April 9–11, and September 10, 1928; two immature females, Bo Ploi, Kanburi, September 8, 1928; three males and two females, Bangkok, February 4, 6, 1924, December 19, 1925, September 22, 23, 1930; one unsexed, Nontaburi, March 22, 1924; two females, Aranya, July 16, 23, 1930; one female, Ban Tawai Phra, October 22, 1932; two males, Ban Bua Chum, October 20, 1932; one female, Bung Borapet, July 1, 1932; one male, Petchabun, February 14, 1934; one female, Kao Pae Pan Nam, Lomsak, February 19, 1934; one male and one female, Hin Lap, September 28, 30, 1932; five males, Pak Chong, November 18, 1925, November 20–December 22, 1926; five males and two females, Nong Khor, near Sriracha, September 26–October 1, 1925, November 12, 15, 1926, February 12, 1927; two males (one young) and one female, Ban Sadet, Sriracha, May 28–June 1, 1925; one male, Klong Yai, Sriracha, July 23, 1932; one male, Huey Yang, Sriracha, August 2, 1932; one male and two females, Nong Yang, November 4–9, 1931; one female, Sakeo, near Krabin, May 9, 1928; one male and one female, Kao Seming, Krat, October 15, 16, 1928; one male, Kao Bantad, Krat, December 23, 1929; four males, Kao Sabap, October 28–November 26, 1933.

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[71] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 453, 1919.

Dr. W. L. Abbott collected three males and four females in the Mergui Archipelago (Chance Island, December 28, 31, 1899; Loughborough Island, January 25, 1900; Bentinck Island, March 8, 1900; Hastings Island, December 11, 1900).

The length of the outer tail feather and the size and twist of the spatula vary enormously and apparently are of little use in defining the various races. The outer tail feather grows for some time, and it is difficult to tell without a very close examination whether it has reached maturity. The length of wing and the development of the crest are the principal characters relied upon to distinguish the forms occurring in Siam.

This form has a moderate crest and is larger than the Malayan form but is smaller than the form from the north, and the crest is less pronounced. To the southwest the present form apparently goes as far as the Isthmus of Kra or not quite so far. Eastward it apparently extends into southern Indo-China. Dr. Smith took the northern form on the Mekong below Vientiane, but whether it is the resident form in this part of the country is not definitely known. Gairdner took *D. p. paradiseus* in the Raheng district in western Siam though his birds were intermediate. Specimens from southeastern Siam average a trifle larger than birds from central and southwestern Siam.

The series from the Mergui Archipelago collected by Dr. Abbott are more or less intermediate between *D. p. malayensis* and *D. p. paradiseus*, but nearer the latter. They differ hardly sufficiently to be recognized as an insular race.

Ten males from central Siam measure: Wing, 150–165.5 (157.4); outer tail feather, 318–395 (366.3); middle tail feathers, 134–142.5 (137); culmen 25–27.5 (25.9) mm. Ten males from eastern and southeastern Siam: Wing, 154–166.5 (159.4); outer tail feather, 320–400 (342); middle tail feathers, 134.5–146 (138.9); culmen, 27–29 (27.5) mm. Three males from the Mergui Archipelago: Wing, 155–160 (157); outer tail feather, 343–425 (382.7); middle tail feathers, 129–141.5 (133.5); culmen, 27–29 (27.7) mm. Four females from the Mergui Archipelago: Wing, 152–154.5 (152.6); outer tail feather, 320–345 (330.5); middle tail feathers, 126–133.5 (129.4); culmen, 26–27 (26.6) mm.

A young male taken by Dr. Smith at Ban Sadet, Sriracha, June 1, is about half grown. It resembles the adult but is duller below, though a band across the chest has begun to develop metallic tips to the feathers; the spatulae to the outer tail feathers have not cleared the sheath yet but already have the characteristic twist; the crest is short and feathery; there are no white spots below.

Several older immature females in the series taken in fall have the breast feathers tipped with white. The question arises as to whether there is a sexual difference in the immature or whether both sexes have spotted breasts in the first winter plumages that later wear off. I am inclined to the latter view.

This form occurs from southern Tenasserim and southwestern Siam north to the Raheng district, western Siam, thence east to eastern and southeastern Siam and southern Indo-China.

Herbert[72] reports it nesting in central Siam in May with eggs laid about the middle of the month; he has one record for June 5 and one record of young being fed by the parents on April 29.

Robinson[73] records *D. p. malayensis* from Koh Lak, but a female in the United States National Museum from this locality is nearer *D. p. paradiseus*. He[74] records *D. p. paradiseus* from Koh Chang, Klong Yai, and Klong Menao, southeastern Siam.

The United States National Museum possesses specimens of *D. p. paradiseus* from Trang Bom, Cochinchina and Daban, southern Annam. I think Delacour and Jabouille.[75] are in error in assigning specimens from these localities to *D. p. malayensis*. It would give an almost impossible range for the latter, being cut in two by *D. p. paradiseus*.

DISSEMURUS PARADISEUS RANGOONENSIS (Gould)

Edolius rangoonensis GOULD, Proc. Zool. Soc. London, 1836, p. 5 (Rangoon, Burma).

Two females, Khun Tan, August 30 and September 2, 1930; one male, Doi Hua Mot, August 20, 1934; one male, Muang Pai, December 27, 1932; one male, Sobpung, December 21, 1932; one male, Ban Den Muang, on the Mekong, February 25, 1929; one male, Nakon Panom, on the Mekong, March 8, 1929; one immature male and one immature female, Lat Bua Kao, August 10, 1929; one female, Ta Fang, January 17, 1933.

This is a larger bird than *D. p. paradiseus* with a longer and more pronounced crest and the twisted spatula at the tip averaging longer. The three males measure: Wing, 165–173 (168.7); outer tail feathers, 335–380 (358.3); middle tail feather, 134–148 (141.7); culmen, 26–29 (27.8) mm. The female from Ta Fang: Wing, 164; outer tail feather, 370; middle tail feather, 150; culmen, 30 mm. The two females from Khun Tan are immature and have not been measured.

This form ranges from central and south central Burma to the southern Shan States and northern and northeastern Siam.

The male from Ban Den Muang and the male from Nakon Panom agree with the northern specimens. Both localities are on the Mekong below Vientiane. The two immature specimens from Lat Bua Kao are not old enough to be determined with certainty; the spatula of the outer tail feather is long, but there are in the National Museum two adult males from this locality, collected by C. Boden Kloss, October 17, 19, that apparently belong to this form. These specimens are out of the accepted range of the form. Whether they are just strays in the nonbreeding season or the resident form in this section of the country is for the future to decide.

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[72] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 96, pl. 9 (nest), 1923.

[73] Ibis, 1928, p. 228.

[74] Ibis, 1915, p. 760.

[75] Oiseaux l'Indochine Française, vol. 4, p. 86, 1931.

The measurements of the few birds handled, except for the wing, do not reach Stuart Baker's maximum;[76] it is quite possible that they are not typical.

De Schauensee[77] records it from Doi Sutep, 2,500–5,300 feet, Chiengmai, and Chiengsen Kao. On his third expedition[78] he secured a small series at Chiengmai and Chiengsen and says that it is common in northern Siam in the drier types of forest. Deignan[79] reports it common in the evergreen up to 3,500 feet on Doi Sutep, less common on the plain in dipterocarpaceous scrub jungle.

DISSEMURUS PARADISEUS MALAYENSIS (Blyth)

Edolius malayensis Blyth, Journ. Asiat. Soc. Bengal, vol. 28, p. 272, 1859 (Penang and Andamans; type locality restricted to Penang by Kloss[80]).

Dissemurus paradiseus hypoballus Oberholser, Journ. Washington Acad. Sci., vol. 16, p. 518, 1926 (Prahmon, Trang).

Three males and one female, Bangnara, Patani, July 9, 10, 1926; one female, Bukit, Patani, January 23, 1931; three males, Kao Soi Dao, Trang, January 4–17, 1934; one male and one female, Kao Luang, Nakon Sritamarat, July 23, 1928, October 4, 1930; one female, Bandon, January 5, 1927; two males and one female, Sichol, August 31, 1929, May 26, 1930; one male and three females, Tha Lo, Bandon, September 15–25, 1931; one male and two females, Koh Pangan, July 23, 30, 1931; one male, Koh Samui, off Bandon, August 6, 1931.

Dr. W. L. Abbott collected five males and two females in Trang (Prahmon, April 1–16, 1896; Trang, January 26, 1899); one female, Pulo Langkawi, December 2, 1899; one female, Pulo Adang, Butang Islands, December 15, 1899. He gives the soft parts as: Iris red; bill and feet black.

This form is somewhat smaller than *D. p. paradiseus*, with smaller bill, tail, and crest.

The specimens from Patani are in worn plumage; they are intermediate between this form and *D. p. platurus* and could with equal propriety be placed with one or the other but on the whole are probably nearer *malayensis.* The same could be said of the specimens from Pulo Adang and Pulo Langkawi. As a matter of fact, specimens of *D. p. platurus* and *D. p. malayensis* are much alike. The latter has a slightly larger crest, but this varies individually and some specimens are almost identical. The two could well be merged, but as the specimens at hand from the southern tip of the Malay Peninsula at my command are a little different from those farther north, they are kept separate for the present.

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[76] The fauna of British India, Birds, ed. 2, vol. 2, p. 378, 1924.

[77] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 554, 1930.

[78] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 228, 1934.

[79] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 148, 1931.

[80] Ibis, 1918, p. 519.

Eight males from Peninsular Siam measure: Wing, 141–151.5 (145.5); outer tail feather, 270–350 (314.8); middle tail feather, 120–136.5 (125); culmen, 23–27 (25.6) mm. Six females from Peninsular Siam: Wing, 142–151 (146); outer tail feather, 287–310 (296.4); middle tail feather, 113–137 (127.7); culmen, 24–25.5 (24.8) mm.

The form ranges from about latitude 4° S. northward through Peninsular Siam to about the Isthmus of Kra and extreme southern Tenasserim.

DISSEMURUS PARADISEUS PLATURUS (Vieillot)

Dicrurus platurus Vieillot, Nouv. Dict. Hist. Nat., ed. 2, vol. 9, p. 588, 1817 (locality uncertain: Malacca [81]).

Dissemurus paradiseus messatius Oberholser, Journ. Washington Acad. Sci., vol. 16, p. 519, 1926 (Singapore Island).

Dr. W. L. Abbott collected one male and three females, Singapore Island, May 14–29, 1899; one young female, Rumpin River, Pahang, May 27, 1902.

This small series has a slightly smaller crest than *D. p. malayensis.* It is no smaller. The differences are not great and the two could be merged without violence. The few specimens examined from Sumatra have still smaller crests, and I hardly believe they are the same as the Peninsular birds. This would leave *D. p. platurus* with a rather restricted range, being confined to the Malay States south of about latitude 4° S.

The adult male from Singapore, type of *D. p. messatius,* measures: Wing, 153; outer tail feather, 310; middle tail feather, 127; culmen, 26.5 mm. The adult female from Singapore: Wing, 143; outer tail feather, 260; middle tail feather, 127.5; culmen, 27 mm. The other two females from Singapore are not fully adult and the measurements are not given.

The young female from the Rumpin River, Pahang, May 27, is about half grown. It resembles the adult very closely, except that it is duller, more fuscous below, with little or no metallic tips to the feathers. The outer tail feathers have emerged from their sheaths beyond the spatula, and the latter is curved and folded over as in the adult; most of the base of the feather is still to emerge, and the feather continues to grow for some time after it apparently reaches maturity. This accounts partly for the great differences in the measurement of this feather even from the same locality.

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[81] Robinson and Kloss, Journ. Straits Branch Roy. Asiat. Soc., No. 81, p. 111, 1920.

Family ORIOLIDAE: Orioles

ORIOLUS CHINENSIS DIFFUSUS Sharpe

Oriolus diffusus SHARPE, Catalogue of the birds in the British Museum, vol. 3, p. 197, 1877 (Malabar).

One female, Pran, April 4, 1931; three males and one female, Bangkok, October 29 and November 2, 1923, December 18, 1925, April 5, 1926; two females, Pak Chong, November 18, 1925; two males and one female, Hin Lap, December 9, 12, 1931, October 2, 1932; one male, Ban Nam Kien, Nan, April 18, 1930; one male, Tha Chang, March 19, 1927; two males and one female, Nong Yang, November 6, 16, 1931; one male and two females, Nong Khor, November 14, 1926, February 5, 1927; one male and three females, Kao Sabap, January 9, 1930, October 28–November 8, 1933; one male and two females, Kao Seming, Krat, October 11–16, 1928; one male and two females, Kao Bantad, Krat, December 27–29, 1929; two females, Koh Chang, January 4, 5, 1926.

Dr. W. L. Abbott collected three males in Trang (Prahmon, February 24, 29, 1896; Kantany, January 16, 1897); two males and three females, Mergui Archipelago (Chance Island, December 28, 1899; Loughborough Island, January 25, 1900; Helfer Island, March 6, 1900; Hastings Island, December 11, 1900); and two females, Tenasserim (Tanjong Badak, January 11, 1900; Champang, December 21, 1903). He gives the color of the soft parts in three males from Trang as follows: Iris grayish brown, dark brown, or red; bill fleshy purple or fleshy pink; feet leaden.

This form breeds in southeastern Siberia, Manchuria, and China, and migrates to Indo-China, Burma, Siam, and the Malay Peninsula to winter.

In Siam proper it is a common winter resident nearly all over the country. In Peninsular Siam it is less common from Trang southward.

Williamson [82] states that it arrives at Bangkok in October and leaves in April. Robinson [83] records it from Koh Kut, Koh Chang, Koh Rang, and Ok Yam. The United States National Museum has a male from Koh Si Chang, taken January 25, 1915, by C. Boden Kloss. It has been recorded from other islands off the coast of Peninsular Siam also.

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[82] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 201, 1915.

[83] Ibis, 1915, p. 758.

ORIOLUS CHINENSIS TENUIROSTRIS Blyth

Oriolus tenuirostris BLYTH, Journ. Asiat. Soc. Bengal, vol. 15, p. 48, 1846 (Central India).

One male, Khun Tan Mountains, 2,000 feet, November 23, 1928; one female, Doi Nangka, November 17, 1930.

The above two specimens have been compared with a good series from the Likiang Mountains, Yunnan, and the latter seem to have on the average somewhat longer bills, but this might not hold in a larger Siamese series. The culmens in the two Siamese specimens measure: 30.5 mm (male); 31 mm (female). The culmens of six males from Yunnan measure: 31.5, 32, 32.5, 31, 32, 32.5 mm. The culmens in two females from Yunnan: 31.5, 31 mm.

This race differs from *O. c. diffusus* in having the back greenish, the black nuchal band narrower, and the bill longer and slenderer.

In Siam it has been taken commonly only in the mountains of the north. It was first recorded by Williamson [84] from Doi Nga Chang, Lampang. On Doi Sutep it has been taken by several collectors, Deignan stating that it occurs there from 3,000 feet to the summit from October to February;[85] this would seem to indicate that it was only a winter visitor. Baker [86] has recorded it from Krabin and Klong Bang Lai, central Siam, and apparently these are the only records for this part of the country. Lowe [87] took it 28 miles east of Umpang; de Schauensee[88] at Khun Tan, Chiengmai, and Chiengdao.

The form breeds in the foothills of the Himalayas from Nepal to Assam, Burma, and Yunnan, and migrates south to Cachar, Siam, and Indo-China to winter.

ORIOLUS XANTHORNUS XANTHORNUS Linnaeus

Oriolus xanthornus LINNAEUS, Systema naturae, ed. 10, p. 108, 1758 (America error; Bengal).

Oriolus luteolus thaicaous HARTERT, Bull. Brit. Orn. Club, vol. 38, p. 63, 1918 (Koh Lak, Southwestern Siam).

One male, Kao Luang, Nakon Sritamarat, October 10, 1930; one male, Koh Lak, June 23, 1933; 11 males (three immature), Pran, May 26, 29, 1928, April 2–4, 1931; three males, Sam Roi Yot, November 7, 8, 1932; four males (two immature) and one female, Muang Kanburi, April 7–10, September 10, 1928; one male, Kanburi, September 19, 1929; one male, Kwe Noi, Kanburi, September 24, 1929; one male, Wang Kien, Kanburi, March 12, 1934; one immature male, Vichienburi, February 26, 1934; three males (one immature) and one female, Sakeo, near Krabin, May 2–7, 1928; one male, Nong Mong, Muang Krabin, August 29, 1925; one male, Sriracha, November 5,

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[84] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 21, 1918.

[85] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 150, 1931.

[86] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 208, 1919.

[87] Ibis, 1933, p. 277.

[88] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 232, 1934.

1924; one male, Huey Yang, Sriracha, August 5, 1932; three males, Nong Khor, November 15, 1926, February 5, 12, 1927; one male and one female, Nong Yang, November 4, 9, 1931; one male, Pong, Udon, February 17, 1929; one male, Kao Seming, Krat, January 2, 1930; two males (one immature), Chantuk, June 14, 15, 1934; one adult male and one nestling male; Pak Chong, May 4, 1926; one male, Bua Yai, Korat Plateau, February 15, 1929; one male, Muek Lek, April 25, 1933; three males and three females, Ban Nam Kien, Nan, April 18–23, 1930; one male, Mekhan, February 9, 1932; one male, Doi Phra Chao, August 4, 1934.

Dr. W. L. Abbott collected: Five males (one immature) in Trang (Prahmon, February 24–March 17, 1896; Trang, March 4, 1899); and one male, Bok Pyin, Tenasserim, February 16, 1900. He gives the soft parts as: Iris red or dark red; bill fleshy purple or pinkish flesh color; feet leaden. The immature male had the iris reddish brown; bill dull pinkish, indistinctly blotched with black patches.

The majority of Siamese specimens have the black extending across the tail to the outer feather as a bar, but in some there is no black at all on the two outer feathers, and in others it is a mere blotch on the outer web. In fact, this feature is very inconstant and variable, as is also the color of the back in the male. In some it is sulphine yellow, in others almost cadmium yellow. I rather think these differences are due to age. A sufficient series from India has not been available to test out any differences that might exist between it and the populations to the eastward. I am following Stuart Baker[89] in uniting all the mainland birds under one name.

The nestling taken by Dr. Smith at Pak Chong, May 4, is barely out of the nest. It resembles the adult female, but the breast is much lighter, almost white down the center, with elliptical black spots; the mantle is also spotted with black.

The form is resident all over Siam proper and extends down Peninsular Siam as far as the island of Langkawi, where it has been recorded by Robinson.[90]

The whole range extends from India to Assam, Burma, Siam, and Indo-China, and south to Tenasserim and Peninsular Siam as far as Langkawi. Closely related forms occur in Ceylon and northern Borneo.

ORIOLUS XANTHONOTUS XANTHONOTUS Horsfield

Oriolus xanthonotus HORSFIELD, Trans. Linn. Soc. London, vol. 13, p. 152, 1821 (Java).

Two males, Kao Soi Dao, Trang, January 7, 19, 1934; two males, Sichol, September 5, 1929, May 27, 1930; one male and one female, Kao Luang, Nakon Sritamarat, July 14, 19, 1928.

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[89] The fauna of British India, Birds, ed. 2, vol. 3, p. 11, 1930.

[90] Journ. Federated Malay States Mus., vol. 7, p. 187, 1917.

Dr. W. L. Abbott collected one immature male, Lay Song Hong, Trang, December 29, 1896; one male, Trang, February 4, 1897; one male, Endau River, eastern coast of Johore, June 28, 1901; and one male and one female, Rumpin River, Pahang, June 29, 30, 1902. He gives the soft parts of the adult males as: Iris red; bill pale fleshy brown or orange fleshy; feet dark. In the immature male they are given as: Iris pink; bill reddish brown; feet leaden.

The immature male collected by Dr. Abbott at Lay Song Hong, Trang, December 29, is in a plumage hardly differing from the female. It is brighter and less yellowish green above; the pileum duskier, the streaks below somewhat narrower, and the bill shorter. It may be incorrectly sexed, but if not it would seem to be a rather late date for this plumage.

The form ranges from Java and Sumatra to the Malay States and north through Peninsular Siam to southern Tenasserim.

Robinson and Kloss [91] record it from Tasan. This is as far north in Peninsular Siam as I have seen any records. Apparently it is not a common bird in the northern part of the Peninsula, and possibly it is often overlooked on account of habits. Dr. Abbott has a note on one of his specimens that it was shot in heavy forest. This observation is confirmed by Robinson.[92] A number of closely related forms have been named from islands off the western coast of Sumatra, Borneo, and the Philippines.

ORIOLUS TRAILII TRAILII (Vigors)

Pastor traillii VIGORS, Proc. Zool. Soc. London, 1832, p. 175 (Himalayas).

One adult female, Doi Angka, 7,500 feet, December 6, 1928; one immature male, Doi Nangka, November 19, 1932; two adult males and one adult female, Pang Meton (Doi Nangka), April 29 and May 4, 1931; one subadult male, Doi Sutep, February 3, 1932; one immature male, Khun Tan Mountains, 3,000 feet, May 12, 1933. Dr. Smith records the color of the soft parts in a female as: Iris pale yellow; bill and feet pale blue; soles yellow.

The three immature males are in three stages of plumage. The youngest resembles the female, but the back has a brownish tinge and some of the feathers of the mantle and middle wing coverts have slight fulvous tips; below it is lighter and the blackish streaks are narrower; it was taken May 12. The next stage is much darker above and below, and there is a slight tinge of maroon on the back. It was taken November 19. In the third stage the back is maroon as in the adult, but darker, caused by some of the feathers still having narrow blackish margins and the white subterminal spot appearing only on the upper back and reduced in area. The lower parts are still streaked black and white, with some of the feathers showing maroon tips; otherwise like the adult male. It was taken February 3.

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[91] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 351, 1924.

[92] The birds of the Malay Peninsula, vol. 1, p. 272, 1927.

The two adult females are not alike. One has the back slightly washed with maroon; in the other this wash is lacking, the back being brownish black. In both the central tail feathers are dark and the outer webs of the others are like the middle pair. In the adult male the middle tail feathers are light acajou red, and only the outer web of the outer tail feathers is blackish or has a trace of black at the tips on the outer web, except in one specimen, where there is a black border on the outer web toward the tip. Apparently the species is variable individually.

The form ranges in the Himalayas from the Sutlej Valley east to eastern Assam, Burma, Tenasserim, Siam, Yunnan, Laos, Tonkin, and northern Annam.

It is a mountain species and has been taken so far only in northern and western Siam, where it is resident, coming lower down on the mountains in the cold season. A number of collectors have taken it on Doi Sutep, where it appears to be not uncommon. Deignan[93] says it occurs there in summer between 3,500 and 5,500 feet, in winter as low as 2,000 feet. Chasen and Kloss[94] record it from the Raheng district at 2,500 feet. Lowe[95] secured a specimen 35 miles east of Umpang, at 2,400 feet, February 4. De Schauensee[96] took quite a series at Chiengmai and Chiengdao, between 3,000 and 5,000 feet, and they were most frequently found at 4,000 feet.

A closely related form, *O. t. robinsoni* Delacour, occurs in southern Annam, and two other forms are known, one in Formosa, the other in Hainan.

ORIOLUS MELLIANUS Stresemann

Oriolus trailii mellianus Stresemann, Orn. Monatsb., vol. 30, p. 64, 1922 (Kwantung, China).

Three males and three females, Kao Sabap, 2,000–3,000 feet, January 6, 1930, November 8–26, 1933.

As no description in English is known to me, I give a brief description of the two sexes:

Male.—Head all around and wings black, with a greenish sheen; upper and underparts silvery white, the feathers with a subterminal arrow-shaped spot of deep hellebore red, mostly concealed; upper tail coverts acajou red, with broad silvery white tips mostly concealing the red; tail acajou red, lighter on the outer feathers and darker on the central pair, each feather narrowly bordered on the outer web and at the tip with silvery white, the central pair on both webs, the shafts white; under tail coverts acajou red bordered at the tip with silvery white, dusky drab subapically in certain lights; the under side of the tail is considerably lighter than the upper and the edging is much narrower and pale vinaceous; thighs black.

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[93] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 8, p. 151, 1931.

[94] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 7, p. 182, 1928.

[95] Ibis, 1933, p. 277.

[96] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 232, 1934.

Female (no. 334087).—Pileum, hindneck, cheeks, and wings dull black, the outer primaries, except the first, with a narrow border of pale olive gray; throat white with broad black streaks; chest white with broad mouse-gray centers to the feathers; breast and belly white narrowly streaked with dull black; back mouse gray with obsolete dusky shaft streaks; upper tail coverts madder brown, the feathers with a very narrow pale vinaceous fringe; tail hessian brown, lighter along the shaft and in certain positions; the outer tail feathers with a broad streak along the shaft on the inner web etruscan red, this streak occupying most of the inner web on the outer feather but diminishing toward the central pair, which lacks it entirely, shafts a little darker than the feather; under tail coverts light russet-vinaceous, the feathers white at the base and with dusky shaft streaks on the shorter feathers; thighs black.

No two females are alike in the above small series. In another female (no. 334089) the back is a lighter gray and the dusky shaft markings are broader and more conspicuous; the centers to the chest feathers are not so broad and are blackish rather than gray. The third female (no. 334088) is intermediate in the color of the back; the crown, occiput, and cheeks are dark neutral gray; the forehead is narrowly streaked with white; and the blackish streaks on the throat are narrower than the last. I rather think it is a younger bird than the other two.

The three males measure: Wing, 150–158.5 (153.8); tail, 92.5–99 (96.3); culmen, 25–28.5 (26.3) mm. The three females: Wing, 142–148 (145); tail, 91–98 (94.7); culmen, 27–28 (27.3) mm.

Dr. Smith sent no notes on the colors of the soft parts. In the skin the bill is slate gray, light horn color at the extreme tip.

Oriolus trailii has the body feathers maroon, white subapically, while in *mellianus* the body feathers are silvery white, acajou red subapically; in other words, the body coloring in the two species is reversed.

This species was first described from a female, and the male was unknown until M. Delacour visited Canton and discovered this sex in the collection of the Sunyatsen University and gave a description of it along with a description of the adult female and young male.[97] These descriptions were taken from specimens collected in the Yaoshan Mountains, Kwangsi, China. Mr. Yung [98] states that it is found in the Yaoshan Mountains from April to August. It has also been taken in winter at Bokor, 3,000 feet, Cambodia.[99]

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[97] L'Oiseau, vol. 11, p. 339, 1930.

[98] Bull. Dept. Biol. Sunyatsen Univ., no. 5, p. 19, 1930.

[99] Delacour, Bull. Brit. Orn. Club, vol. 51, p. 46, 1930.

Stresemann[1] has given a history of the species as far as known, with a colored plate of the adult male and a female. The latter does not agree with any of the females described above, not even with the one I have supposed was somewhat immature. None of the three females has the pileum and wings brown as depicted. They are either slate gray or dull black. I surmise that the female depicted must be a still younger bird than any I have examined.

The species evidently breeds in the mountains of southeastern China and migrates in winter to Cambodia and to southeastern and southwestern Siam. Dr. Smith states that he found it rather common on his second visit to Kao Sabap but hard to collect, as it frequented the tops of the tallest trees. Dr. Smith[2] has published some notes on the habits and gives the additional localities of Kao Seming, Krat, and Ban Thung Luang, Pran River. The last is the first record for southwestern Siam.

Family IRENIDAE: Fairy Bluebirds

IRENA PUELLA PUELLA (Latham)

Coracias puella LATHAM, Index ornithologicus, vol. 1, p. 171, 1790 (India).

One female, Doi Nangka, November 18, 1930; one male, Pang Meton (Doi Nangka), May 3, 1931; two males and one female, Khun Tan Mountains, 3,000–4,300 feet, May 12, 18, 1933; eight males and two females, Khun Tan, 4,000 feet, October 21, 22, 1929, August 30-September 3, 1930, February 17–24, 1932; one male and one female, Pak Chong, December 16, 1926; one male, Lamton Lang, June 1, 1934; one male and one female, Kao Lem, December 27, 1930; one male, Hupbon, October 31, 1931; eight males and six females, Nong Khor, near Sriracha, November 14, 1924, September 30, 1925, March 22 and November 11, 1926, February 5, 1927; three females, Nong Yang, November 4, 1931; two males, Ban Sadet, Sriracha, June 1, 1926; two males, Klong Yai, Sriracha, July 24, 28, 1932; one male and one female, Ban Tarn Dam, March 6, 7, 1930; one male, Kao Bantad, Krat, December 22, 1929; five males and two females, Kao Seming, Krat, October 10–14, 1928; two males and one female, Kao Sabap, October 30, November 6, 1933; two adult males, three immature males and one female, Koh Chang, January 6–11, 1926; March 10, 1930; three males and one female, Koh Kut, May 22–25, 1929; one female, Sai Yak, Kanburi, September 23, 1929; two females, Tha Lo, Bandon, September 24, 1931; three males and two females, Sichol, Bandon, September 1, 5, 1929, May 18, 1930; one male, Wat Kiriwong, Nakon Sritamarat, July 25, 1928; one male, Kao Luang, Nakon Sritamarat

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[1] L'Oiseau, new ser., vol. 1, pp. 201–207, 1931.

[2] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 329, 1934.

July 14, 1928; two males, Kao Chong, Trang, September 1, 9, 1933; five males, Kao Soi Dao, Trang, December 31, 1933; January 5, 7, 1934; one male, Patalung, July 7, 1929.

Dr. W. L. Abbott collected six males and six females in Trang (Telibon Island, February 28, 1896; Prahmon, February 26, March 6–10, 1896; Tyching, July 22, 1896; Lay Song Hong, November 6 and December 18, 1896; Trang, January 3, February 5, 19, 1897; Kok Sai, December 28, 1898); three males and one female, Mergui Archipelago, 1900 (St. Matthew Island, January 16; St. Luke Island, January 21; Loughborough Island, January 23); and one male, Red Point, Tenasserim, February 23, 1904. He also took a set of two eggs in Trang, February 19, 1897. He gives the soft parts as: Iris red or orange; bill and feet black.

None of the males from the Malay Peninsula in the above series has the under tail coverts come within an inch or more of the tip of the tail.

One of Dr. Abbott's males from Lay Song Hong, Trang, November 6, is immature. It resembles the female in plumage but is a deeper blue and the wings are darker; the rump feathers have the tips of the feathers a shining blue, not to the same extent or as deep a color as the adult, however. The specimen is of about adult size.

Four of Dr. Smith's males are immature. They are of about adult size and were collected as follows: Three in Koh Chang, January 11 and March 10, and one, Khun Tan, February 19. One is like the specimen collected by Dr. Abbott; the other three have some scattering black feathers appearing on the lower parts, mostly on the throat and sides of face; above there are some scattering shining blue feathers appearing on the pileum, hindneck, and rump, these feathers being of a lighter blue than in the adult, however.

This form has a wide range, being found in India, Assam, Burma, Indo-China, Siam and down the Peninsular Siam to Trang or somewhat farther. In Siam it is evidently a common resident bird all over the country and on the islands off the coast.

IRENA PUELLA MALAYENSIS Horsfield and Moore

Irena malayensis HORSFIELD and MOORE, A catalogue of the birds in the Museum of the Hon. East-India Company, vol. 1, p. 274, 1854 (Malacca).

Muscicapa cyanea BEGBIE, Malayan Peninsula, p. 517, 1834 (Malacca); not of Vieillot, 1818.

Dr. W. L. Abbott collected a male on Singapore Island, May 20, 1899, and a female at Tanjong Laboha, Trengganu, September 28, 1900.

In this form the under tail coverts reach to within a short distance of the tip of the tail. It seems to be confined mostly to the Malay States.

Robinson and Kloss [3] report it from Pulo Langkawi and Pulo Terutau; later [4] they state that the latter locality is about the northern limit of its range. Ogilvie-Grant [5] records it from Bukit Besar, 2,500 feet, Patani.

In Borneo and Sumatra *I. p. criniger* Sharpe occurs, a form with even longer tail coverts.

Family CORVIDAE: Crows, Magpies, Jays

CORVUS MACRORHYNCHOS ANDAMANENSIS Beavan

Corvus andamanensis Beavan, Ibis, 1866, p. 420 (Andaman Islands).

One male and five females, Bangkok, September 26, 1924, November 6, 1925, January 19 and March 2, 1928, February 6, 1931.

Dr. W. L. Abbott collected one female, Victoria Point, Tenasserim, November 24, 1900, and one male, Domel Island, Mergui Archipelago, January 22, 1904.

The above have been compared with one male and two females from the Andamans, with which they agree fairly well.

The one male and two females from the Andaman Islands measure: Wing, 310-335 (326.3); culmen, 57-61 (59.2) mm. Two males and five females from central and eastern Siam: Wing, 295-327 (309.3); culmen, 53-63 (56.5) mm. One female from Tenasserim: Wing, 310; culmen, 54 mm. The male from Domel Island: Wing, 297; culmen, 62 mm. Three females from northwestern Laos in the United States National Museum seem to agree with the Siamese specimens. They measure: Wing, 295-335 (316.7); culmen, 57-58 mm (one with injured bill).

This crow ranges from the Andaman Islands to Tenasserim, Assam, Burma, western, central, northern, and eastern Siam, and northwestern Laos. It seems to be generally distributed all over Siam proper. I have seen no specimens from southwestern Siam, however. Herbert [6] reports it a common breeding bird near Bangkok, nesting in January and February, though he had a set of five fresh eggs taken as early as December 23, and occasionally it may be found with fresh eggs at the beginning of March.

CORVUS MACRORHYNCHOS MACRORHYNCHOS Wagler

Corvus macrorhynchos Wagler, Systema avium, Corvus, sp. 3, 1827 (Nova Hollandia, Nova Guinea, Sumatra, and Java; type in Munich Museum from Java).

Dr. W. L. Abbott collected two males at Prahmon, Trang, March 2, 3, 1896, and three males at the Butang Islands (Pulo Nipis, December 13, 1899; Pulo Adang, March 15, 16, 1899).

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[3] Ibis, 1911, p. 56.

[4] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 264, 1924.

[5] Fasciculi Malayenses, pt. 3, p. 88, 1905.

[6] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 88, 1923.

This series agrees fairly well with specimens from Java. The five males from the Malay Peninsula measure: Wing, 330–350 (341.6); culmen, 62–67 (65.2) mm. One male and two females from Java: Wing, 330–356 (340.3); culmen, 60–65 (62.3) mm.

In this form the bill is highly arched, longer and heavier than in *C. m. andamanensis.*

Just how far north in Peninsular Siam this race extends I do not know. Robinson and Kloss[7] record it from Tapli. From there southward apparently it is the common and only crow, except in the Malay States.

Its range is Peninsular Siam to the Malay States, Sumatra, Java, and the islands east to Sumba and Flores. Robinson[8] records it from Koh Samui and Koh Pennan, off Bandon; and from Pulo Langkawi and Pulo Telibun.[9]

UROCISSA ERYTHRORHYNCHA MAGNIROSTRIS (Blyth)

Psilorhinus magnirostris Blyth, Journ. Asiat. Soc. Bengal, vol. 15, p. 27, 1846 (Youmadong Hills, Arakan).

One male, Doi Angka, 2,000 feet, December 8, 1928; one male, Doi Muso, December 29, 1932; one female, Mae Suya Valley, January 2, 1933; one female, Muang Pai, December 28, 1932; two males, Pak Chong, February 8, 1925, May 2, 1926; two males, Pang Sok, August 15, 23, 1926; one unsexed, Chantuk, June 15, 1934; one female, Sikeu, near Korat, March 2, 1926. Dr. Smith gives the soft parts as: Iris brown; bill and legs coral red.

I confirm de Schauensee's remarks[10] that both *U. e. magnirostris* and *U. e. erythrorhyncha* have white tips to the primaries, but that in the latter they are smaller. In specimens showing some wear they may be nearly worn off.

U. e. magnirostris is not an uncommon bird in northern and eastern Siam. Chasen and Kloss[11] record it from the Raheng District; Keddie[12] from the Meklong, western Siam.

The form ranges from the hills of Arakan east to Burma, western, northern, and eastern Siam. De Schauensee says they are birds of the deciduous forests not ranging higher than 2,000 feet in the winter. Deignan[13] found them on Doi Sutep to 2,700 feet.

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[7] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 336, 1924.

[8] Journ. Federated Malay States Mus., vol. 5, p. 150, 1915.

[9] Journ. Federated Malay States Mus., vol. 7, p. 188, 1917.

[10] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 178, 1934.

[11] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 180, 1928.

[12] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 122, 1914.

[13] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 134, 1931.

UROCISSA FLAVIROSTRIS ROBINI Delacour (?)

Urocissa flavirostris robini DELACOUR, L'Oiseau, vol. 11, p. 393, 1930 (Fansipan, Tonkin).

Two immature males, Pak Chong, June 20, 1934.

These two birds belong without much doubt to *U. flavirostris*, but not very likely to the above form. They are placed here only because it is the nearest race geographically. I have no immature specimens of any of the forms of *U. flavirostris* with which to compare them but have immature specimens of *U. e. magnirostris* and *U. e. erythrorhyncha* with which they do not agree. They are nearly of adult size, but the tails have not reached their ultimate length.

They differ from immature *U. e. magnirostris* in having the breast and abdomen baryta yellow instead of white; the shafts, the inner margins, and bases of the primaries beneath baryta yellow instead of white or pinkish white; the under surface of the tail, shafts of the feathers (except in the black subterminal bar), and the tips of tail feathers yellow, instead of bluish with white tips; outer margins of the primaries at the sinuation chamois instead of light blue; the back a duskier less bright blue; the light occipital patch does not extend as far forward or as far back and is of a more bluish cast with yellowish bases to the feathers instead of white; the legs are yellowish instead of reddish. The bills are dusky at the base, but the tips are becoming horn color.

They resemble the description by Sharpe [14] of what he took to be young of *Urocissa flavirostris* and he is probably right.

The queer thing about securing the two above young at Pak Chong is that *U. flavirostris* is supposed to be a high-altitude species, and, while the village is a mountain one, the elevation would hardly be sufficient for a bird of this kind.

CISSA CHINENSIS CHINENSIS (Boddaert)

Coracias chinensis BODDAERT, Table des planches enluminéez d'histoire naturelle, p. 38, 1783 (China).

One male and one female, Pang Meton (Doi Nangka), May 1, 2, 1931; one female, Doi Hua Mot, August 29, 1934; one immature male, Khun Tan Mountains, 3,000 feet, May 16, 1933; one male Ta Fang, January 16, 1933; one male, Sanpaiang, December 20, 1932; one male, Aranya, July 7, 1930; one male, Ban Nam Phu, February 28, 1934; one female, Pak Chong, December 8, 1929. Dr. Smith gives the color of the soft parts as: Eyelid, bill, and feet red.

The immature male from the Khun Tan Mountains is of about adult size. It resembles the adult, except the breast and abdomen are pure white, only the throat and foreneck being washed with light green. New green feathers are just emerging from their sheaths on the pectoral tracts and thighs.

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[14] Catalogue of the birds in the British Museum, vol. 3, p. 73, 1877.

This jay has been reported nearly all over Siam proper, except the southeast, where *C. h. hypoleuca* seems to replace it. Robinson and Kloss[15] record a male from Hat Sanuk, which is about as far in this direction as I have seen any records. De Schauensee[16] in recording it from Chiengrai and Chiengmai, says that during the winter he neither saw nor heard birds of this species in the hills. The species is not known to be migratory, however.

The form ranges from the Himalayas to the extreme east of Assam, eastern Bengal, Burma, Tenasserim, southwestern, northern, and eastern Siam and east to northern Laos, Tonkin, and northern Annam.

CISSA HYPOLEUCA HYPOLEUCA Giglioli and Salvadori

Cissa hypoleuca GIGLIOLI and SALVADORI, Atti Reale Accad. Sci. Torino, vol. 20, p. 427, 1885 (Thu-Dan-Mot, Cochin-China).

One male and one unsexed, Nong Khor, November 16, 1926, and February 9, 1927; one female, Nong Nam Kiew, February 15, 1927; one male, Nong Yang, November 13, 1931; one female, Kao Bantad, December 23, 1929; one female, Kao Sabap, November 13, 1933.

The above series is assigned to this form with reservations. I have had a typical female from Cochinchina for comparison, and the Siamese birds are a deeper yellow below with a light greenish wash on the throat and chest. The Cochinchina female is cream color below, with only a greenish wash on the cheeks.

De Schauensee[17] in recording a female from Kao Sabap, has also assigned it to this form with reservations. The female collected by Dr. Smith at the same place evidently differs somewhat from the one he describes in the pattern of the inner remiges. In Dr. Smith's bird there is a black band above the blue subterminal band; the tip is green. The unsexed specimen from Nong Khor also has a similar black bar on the inner remiges above the blue bar. The remaining specimens are without this black bar, however, so it is probably only an individual variation.

Robinson and Kloss[18] have suggested that Baker's record of a juvenile female from Hupbon in Herbert's collection with the underparts brilliant yellow as *Cissa chinensis* is this species. They are undoubtedly correct.

C. h. hypoleuca ranges from southern Annam and Cochinchina to southern Laos and southeastern Siam. *C. h. chauleti* Delacour is found in central Annam.

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[15] Journ. Nat. Hist. Soc., Siam vol. 5, p. 327, 1924.

[16] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 178. 1934.

[17] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 179, 1934.

[18] Journ. Soc. Nat. Hist. Siam. vol. 5, p. 338, 1924.

DENDROCITTA VAGABUNDA KINNEARI Baker

Dendrocitta rufa kinneari Baker, The fauna of British India, Birds, vol. 1, ed. 2, p. 51, 1922 (Toungoo, Burma).

Four males, Muang Kanburi, April 7, and September 10, 11, 1928; one immature female and one immature unsexed, Bo Ploi, Kanburi, September 7, 1928, and September 26, 1929; one female, Mekhan, February 1, 1932.

This series is lighter in color both above and below when compared with a series from eastern Siam. There are a number of specimens from Tenasserim in the United States National Museum, but they are all immature birds not suitable for comparison. No material for comparison has been available from Burma, so I am following the original describer in placing the above series.

There seems to be little difference in size between the series from western and northern Siam and that from eastern Siam. Four males and one female from western (4) and northern (1) Siam measure: Wing, 145–154.5 (148.8); tail, 212–255 (231.4); culmen, 27–30 (28.2) mm. Five males and one female from eastern Siam: Wing, 144–157.5 (148.5); tail, 220–235 (228); culmen, 27–30 (28.5) mm.

The present form ranges over nearly the whole of Burma south of the Chin and Kachin Hills down to northern Tenasserim, the Shan States, western and northern Siam, and Yunnan.

Gyldenstolpe[19] records it from Khun Tan and Pa Hing; Chasen and Kloss[20] from the Raheng District; de Schauensee[21] from Chiengmai, Metang, and Tung Sio, under *D. v. sakeratensis.*

DENDROCITTA VAGABUNDA SAKERATENSIS Gyldenstolpe

Dendrocitta rufa sakeratensis Gyldenstolpe, Bull. Brit. Orn. Club, vol. 41, p. 32, 1920 (Sakerat, eastern Siam).

Two males and one unsexed, Pak Chong, February 7, 1925, December 21, 22, 1926; one female, Pang Sok, August 23, 1926; one male and one female, Nong Mong, Muang Krabin, August 22, 24, 1925; one male, Udon, February 16, 1929; four immature males of various ages, Chantuk, June 14, 16, 1934. Dr. Smith gives the soft parts as: Iris dull reddish brown; bill and legs black.

This series averages darker above and below than the series from northern and western Siam previously commented upon, but there seems to be little or no difference in size.

The immatures taken at Chantuk range from about adult size to about half grown. The young resemble the adult but are browner on the head, lighter on the breast, and the outer feathers of the tail are tipped with cinnamon-buff. This latter character seems to persist long after the specimen is apparently adult, and I suspect they even breed in this plumage the first year. This fact is mentioned since specimens in this stage seem to be browner about the head and lighter on the back and breast than older fully adult birds. In comparing specimens birds of approximately the same age should be used.

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[19] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 17, 1916.

[20] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 180, 1928.

[21] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 179, 1934.

The form ranges from eastern Siam into Laos, Cambodia, Cochinchina, and Annam.

Robinson[22] reports it from Ban Nong Chim and Ban Buang; de Schauensee's[23] records from Kengkoi, Bua Yai, and Nakon Nayok without much doubt belong to this race also, rather than to the northern one.

Kinnear[24] has clearly shown that the name *Corvus rufus* Latham cannot be used for this species, but that *Coracias vagabunda* Latham must take its place.

DENDROCITTA HIMALAYENSIS ASSIMILIS Hume

Dendrocitta assimilis Hume, Stray Feathers, vol. 5, p. 117, 1877 (Hill Tenasserim).

One male, Doi Nangka, 8,000 feet, December 6, 1928; two females, Doi Nangka, November 19, 1930; one male and one female, Pang Meton (Doi Nangka), May 1, 2, 1931; one female, Khun Tan, August 28, 1930.

This race was first recorded from Siam by Count Gyldenstolpe[25] from Khun Tan, since which it has been reported from Doi Sutep by nearly all the collectors that have visited this well-known mountain. De Schauensee,[26] in recording it from Chiengmai and Chiengdao, says that it appears to be a purely mountain bird; all the specimens taken were at an altitude about 4,500 feet. Chasen and Kloss[27] record it from the Raheng District; Stuart Baker[28] from Chan Teuk and Krabin in eastern and southeastern Siam, which seem very unlikely localities for this form.

The form ranges from the mountains of Tenasserim north to the Shan States and northern Siam; eastern Siam (?).

CRYPSIRINA TEMIA (Daudin)

Corvus temia Daudin, Traité élémentaire et complet d'ornithologie, vol. 2, p. 244, 1800 (Java).

Crypsirhina varians longipennis Neumann, Bull. Brit. Orn. Club, vol. 55, p. 136, 1935 (Chantaboon, southeastern Siam).

One female, Huey Yang, Nakon Sritamarat, October 2, 1930; two males and two females, Koh Lak, June 9, 15, 1933; one male, Pran,

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[22] Ibis, 1931, p. 339.

[23] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 178, 1934.

[24] Ibis, 1931, p. 585.

[25] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 164, 1915.

[26] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 179, 1934.

[27] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 180, 1928.

[28] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 181, 1919.

April 3, 1931; one male and one female, Sam Roi Yot, November 8, 11, 1932; two females, Muang Kanburi, April 7, 11, 1928; one male, Kwe Noi, Kanburi, September 20, 1929; one male and one female, Bo Ploi, Kanburi, September 26, 1929; one male and one female, Bangkok, February 22 and April 7, 1924; two females, Bung Borapet, June 28, 1932; one male, Pasak River, October 20, 1932; one male, Ban Tawai Phra, October 22, 1932; three males, Lomkao, Pasak Valley, February 21, 1934; one male, Ban Nam Kien, Nan, April 19, 1930; one female, Prae, April 28, 1930; one male, Ban Chumporn, February 25, 1929; one male and one female, Kumpawapi, near Udon, March 20, 1929; one male, Hin Lap, December 11, 1931; one female, Nong Mong, Krabin, August 24, 1925; one male and one female, Pak Chong, December 8, 1929; one male, Gengkoi, October 16, 1932; one male, Lem Sing, June 26, 1931.

Dr. W. L. Abbott collected one adult male, two adult females, and two young males, Tyching, Trang, May 22-June 1, 1896. He gives the soft parts as: Iris blue; bill and feet black.

The two young birds had barely left the nest and were taken June 1.

Adults of both sexes in fresh fall or winter plumage are a dark iridescent coppery oily green. As the breeding season advances, the upperparts become more or less steely blue. The young are dull black without any gloss, except on the wings, which are greenish like the adults.

I have divided the large series above with some other specimens into three geographic series, as follows:

(1) Java, the Malay Peninsula, and southwestern Siam.

(2) Central and northern Siam.

(3) Eastern and southeastern Siam and southern Annam.

Comparing specimens in the same stage of plumage, I find no difference in color between the three series and little or no difference in average measurements. The tail varies greatly in length and in the width of the central tail feathers at the tip, but I am convinced that this is either individual or an age character and not geographic.

Eleven specimens from Java (4) and Peninsular and southwestern Siam (7) measure: Wing, 114–120 (116.5); tail, 169–198 (182.2); culmen, 21–23.5 (22.3) mm. Twelve specimens from central and northern Siam: Wing, 109–124 (114.5); tail, 173–204 (186.9); culmen, 20–24 (21.9) mm. Twelve specimens from eastern and southeastern Siam (10) and southern Annam (2): Wing, 113.5–122 (118.5); tail, 162–206 (184.7); culmen, 20–23 (21.9) mm.

I have seen no specimens from Sumatra or Borneo.

The species ranges from Pegu east to Siam and Indo-China and south through Peninsular Siam to Sumatra, Java, and Borneo.

The bird occurs all over Siam from Patani in southern Peninsular Siam north to the northern boundary and beyond and east into Indo-China.

De Schauensee[29] says that it is commonest where there is bamboo, but that it does not ascend the mountains; Herbert[30] gives it as a common nesting bird in central Siam, nesting from late in May to early in July, with one record for April and another as late as August.

GARRULUS LEUCOTIS LEUCOTIS Hume

Garrulus leucotis Hume, Stray Feathers, vol. 2, p. 443, 1874 (Kyoukuyat, Salween District, Tenasserim).

One female, Khun Tan, October 17, 1929; one female, Doi Sutep, February 3, 1932; one female, Doi Hua Mot, August 21, 1934; one male, Mesarieng, January 23, 1933; one male, Ban Han, Udon, March 18, 1929.

The above series has been compared with a small series from the mountains of southern Annam. The latter are somewhat worn; and if we allow for this there seems to be little or no difference in color between the two series and little or none in size.

De Schauensee[31] says that during his stay in northern Siam he found this jay commonly from the plains to the summits of the mountains, in all types of jungle. Chasen and Kloss[32] record it from Raheng.

The form ranges from the Kachin Hills, northeastern Burma, south through the Shan States to Tenasserim, western, northern, and eastern Siam and eastward through Laos and Cochinchina to southern Annam. A closely related form, *G. l. oatesi* Sharpe, is found to the westward in the Chin Hills.

PLATYSMURUS LEUCOPTERUS (Temminck)

Glaucopis leucopterus Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 45, pl. 265, 1824 (Sumatra).

One male and one female, Bangnara, Patani, May 13 and June 8, 1924; one male and one female, Yala, Patani, February 2, 1931; one male and one female, Sichol, Bandon, May 26, 1930; two males and two females, Tha Lo, Bandon, September 14–25, 1931; two males, Kao Chong, Trang, September 5, 1933; three males and one female, Kao Soi Dao, Trang, January 1–18, 1934. Dr. Smith gives the soft parts as: Iris reddish brown; bill and legs black.

Dr. W. L. Abbott collected two males and two females in Trang (Lay Song Hong, October 4 and December 28, 1896; Trang, March 2, 1899); one male and one female, Bok Pyin, Tenasserim, February 11,

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[29] Proc. Acad. Nat. Sci. Phila., vol. 86, p. 179, 1934.

[30] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 91, 1923.

[31] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 179, 1934.

[32] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 181, 1928.

15, 1900; one female, Rumpin River, Pahang, June 22, 1902. He gives the soft parts as: Iris deep red, carmine-red, or brown; bill, feet, and claws black.

There is little or no difference in size between the sexes.

Twenty-two specimens from the Malay Peninsula and Tenasserim measure: Wing, 175–200 (186); tail, 169–200 (181); culmen, 29–34.5 (31.5) mm. Five specimens from Sumatra: Wing, 183.5–206 (195.3); tail, 182–201 (188.4); culmen, 29–35 (32.2) mm.

These measurements indicate that the Sumatran bird may be somewhat larger, but the difference is hardly great enough to warrant separation at this time.

The species ranges from Sumatra and the Malay States northward through Peninsular Siam to southern Tenasserim.

Robinson and Kloss[33] record it from Tapli, Pakchan, which is the northernmost record known to me.

Stuart Baker[34] substitutes *Glenargus* Cabanis, 1851, for *Platysmurus* Reichenbach, 1850. The latter is a name accompanied by a cut of the generic characters, certainly of this genus, and it cannot summarily be dismissed. Sharpe[35] fixed the type on *Glaucopis leucopterus* Temminck, which will have to stand unless there is an earlier fixation.

Family PARADOXORNITHIDAE: Parrotbills, Suthoras

PSITTIPARUS GULARIS TRANSFLUVIALIS (Hartert)

Scaeorhynchus gularis transfluvialis HARTERT, Nov. Zool., vol. 7, p. 548, 1900 (Guilang, northern Cachar).

Three males, Khun Tan Mountains, 3,000–4,000 feet, November 21, 1928, May 18, 1933; one male and two females, Doi Nangka, November 17, 1930; three males and three females, Pang Meton (Doi Nangka) May 1–5, 1931.

No specimens are available for comparison except of *P. g. fokiensis* from Fukien, China, to which it bears a close resemblance, but it seems to be somewhat smaller and the black of the forehead is narrower. *P. g. laotiana* I have not seen, and it is possible that the Siamese specimens belong to it. Certainly the underparts are not strongly suffused with fulvous as described by Stuart Baker,[36] but are nearly entirely white, some specimens with a slight buffy tinge on the chest. However, several workers have identified specimens as of this race and I tentatively leave it here for the present. The wings of five males measure: 87–91 (88.7 mm). Besides the localities represented by Dr. Smith's collection, it has been taken by several collectors on Doi Sutep at 4,500–5,500 feet, and Gairdner[37] secured it in the Raheng District.

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[33] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 339, 1934.

[34] The fauna of British India, Birds, ed. 2, vol. 7, p. 8, 1930.

[35] Catalogue of the birds in the British Museum, vol. 3, p. 90, 1877.

[36] The fauna of British India, Birds, ed. 2, vol. 1, p. 118, 1922.

The range of the form is the hills south of the Brahmaputra, Chin, and Cachin Hills, and the hills of central Burma and northern Siam.

Family PARIDAE: Titmice

PARUS MAJOR AMBIGUUS (Raffles)

Turdus ambiguus Raffles, Trans. Linn. Soc. London, vol. 13, p. 313, 1822 (Sumatra).

Parus major malayorum Robinson and Kloss, Journ. Federated Malay States Mus., vol. 8, pt. 2, p. 226, 1918 (Sungei Kumbang, Korinchi, Sumatra).

Dr. W. L. Abbott took one adult male, one adult female, and one immature male at Prahmon, Trang, March 21–27, 1896.

The male has molted the tail, and the tail in the female is much worn and frayed at the tip. The specimens are a deeper gray on the flanks than *P. m. cinereus* of Java. The tail pattern cannot be compared. There seems to be little or no difference in size. No Sumatran specimens are available for comparison.

The immature male was taken March 27 and is nearly full grown. When compared with a slightly younger male of *P. m. cinereus*, it is grayer on the flanks and the yellow tinge is very faint; the white in the tail is mostly confined to the outer feather in *ambiguus;* the second outer feather having a mere dot; the white on the second outer feather of the tail is quite large and well defined in *cinereus*.

This form ranges from Sumatra to the Malay States and northward through Peninsular Siam probably to southern Tenasserim. There seem to be few records from the mainland. Ogilvie-Grant[38] records it from Patani; Müller from Salanga (Puket).[39]

PARUS MAJOR ALTARUM La Touche

Parus major altarum La Touche, Bull. Brit. Orn. Club, vol. 43, p. 43, 1922 (Mengtz, Yunnan).

One male, Doi Nangka, November 4, 1930; one male, Doi Hua Mot, August 12, 1934.

These specimens have been compared with *P. m. tibetanus*, which *altarum* greatly resembles, but they are smaller with more of a yellow tinge on the upper back; and with *P. m. artatus* to which they are nearer in color of the upperparts, but one has the tail pattern of *tibetanus*, that is, the outer tail feather mostly white except for a narrow black border on the inner web; second outer tail feather with a large white wedge-shaped spot, running up about halfway from the tip, shaft black almost to the tip; the next three feathers with smaller spots, diminishing toward the central rectrices; wing, 61.5, 63.5 mm.

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[37] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 179, 1928.

[38] Fasciculi Malayenses, pt. 3, p. 77, 1905.

[39] Die Ornis der Insel Salanga, p. 20, 1882.

The male from Doi Hua Mot is molting the tail, and it is too early to make out the pattern.

This race occurs in southeastern Yunnan, northwestern Tonkin, northern Laos, and northern Siam. De Schauensee [40] secured six specimens at Chiengdao, 4,500–5,500 feet, which he identifies as *P. m. commixus*, a form confined to southeastern China and having the back entirely gray. Deignan [41] gives the additional localities of Doi Sutep and Doi Angka.

MACHLOPHUS SPILONOTUS SUBVIRIDIS (Blyth)

Parus subviridis Blyth, Tickell MS., Journ. Asiat. Soc. Bengal, vol. 24, p. 265, 1855 (Tenasserim).

Five males and two females, Doi Nangka, November 10–19, 1930, April 22–May 6, 1931; one female, Pang Meton (Doi Nangka), April 30, 1931; one male and one female, Doi Hua Mot, August 26, September 4, 1934.

A male and female in the United States National Museum are from the Langbian Peaks, South Annam. The male, when compared with the Siamese series, has the back grayer, less suffused with yellow, on the sides of the breast, the yellow is less bright, and the white on the secondaries and tail is more restricted; the female does not differ materially, however. The Langbian Peaks are quite isolated from the rest of the known range of the form.

The wings of five Siamese males measure 76–79 (77.2) mm; the wing of the Langbian Peak male, 76 mm.

The known range of *M. s. subviridis* is Tenasserim, Burma, northern Siam, to Laos and (?) southern Annam.

When Count Gyldenstolpe published his list of the birds of Siam, only one specimen of this bird had been taken in the country, at Doi Ngachang south of Lakorn Lampang,[42] since then it has been found not uncommon by several collectors [43] on Doi Sutep from 3,500 feet to the summit, and it will probably be found on other mountains of sufficient elevation.

MELANOCHLORA SULTANEA SULTANEA (Hodgson)

Parus sultaneus Hodgson, Indian Rev., 1836, p. 31 (Nepal).

Four males and four females, Khun Tan, October 17, 18, 1929, August 25–September 3, 1930; two males, Doi Tin Pata, December 26, 1932; two females, Melang Valley, December 31, 1932; one male, Doi Phra Chao, August 6, 1934.

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[40] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 180, 1934.

[41] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 103, 1936.

[42] Ibis, 1920, p. 468.

[43] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 528, 1930; vol. 86, p. 180, 1934; Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 135, 1931; p. 246, 1932.

No specimens are available from Nepal or Burma for comparison. Count Gyldenstolpe,[44] referring to northern Siamese specimens, says they are somewhat intermediate between the Peninsular form and that from India. Our measurements of the males seem to bear out his remarks, the only difference between the two forms being principally one of size. Five males from northern Siam measure: Wing, 108–113 (110.2); tail, 90–93 (91.5); culmen, 13–14 5 (13.7) mm.

The form extends from Nepal through Assam to Burma, northern Siam, and Laos. It is said to be common locally in northern Siam.

MELANOCHLORA SULTANEA FLAVOCRISTATA (Lafresnaye)

Parus flavocristatus LAFRESNAYE, Mag. Zool., Cl. 2, pl. 80, 1837 (Isles de la Sonde).

One male and one female, Waterfall, Trang, August 26, 1933; two males and one female, Kao Soi Dao, Trang, December 21, 1933, January 8, 1934; one male, Sichol, Bandon, September 1, 1929; one male, Tha Lo, Bandon, September 15, 1931; one male and one female, Pran, April 1, 1931; one immature male, Ban Nam Phu, February 25, 1934; one male, Pang Sok, August 25, 1926; three males and two females, Pak Chong, November 16, 24, 1929; one male, Liken, near Korat, February 18, 1926; two males, Nong Yang, November 9, 1931; three males and one female, Lamton Lang, May 28–June 2, 1934.

Dr. W. L. Abbott collected: three males, Trang (Lay Song Hong, September 7, 1896; Trang, January 3, 1899); and one male and one female, Packa, Trengganu, September 27, 1900.

This form gradually becomes larger from the Malay States northward until it is rather difficult to draw a line between it and the northern form, especially as Siamese specimens of the latter are somewhat intermediate. Specimens from southwestern and eastern Siam seem to belong to the smaller Peninsular race.

Ten males from Bandon (2), southwestern Siam (1), and eastern Siam (7) measure: Wing, 102–109 (106.7); tail, 86.5–95 (90.4); culmen, 13–14.5 (13.6) mm. Five males from Perak-Pahang border (1), Trengganu (1), and Trang (3): Wing, 104–107.5 (105.7); tail, 82–87 (85.4); culmen, 13–14 (13.4) mm.

The form ranges from Sumatra and the Malay States northward through Peninsular Siam and southwestern Siam to eastern Siam.

Family SITTIDAE: Nuthatches

CALLISITTA FRONTALIS FRONTALIS (Swainson)

Sitta frontalis SWAINSON, Zoological illustrations, ser. 1, pl. 2, 1820 (Ceylon).

One male, Bo Ploi, Kanburi, September 6, 1929; one male, Doi Angka, 4,000 feet, December 3, 1928; one male, Kumpawapi, February

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[44] Ibis, 1920, p. 468.

17, 1929; nine males and four females, Khun Tan, 4,000 feet, September 26–October 20, 1929, September 8, 19, 1930, February 17–March 4, 1932; two immature males, Pang Meton (Doi Nangka), May 1, 1931; two males, Doi Hua Mot, August 19 and September 4, 1934; one male, Chiengdao, January 29, 1932; two immature males, Khun Tan Mountains, 4,000 feet, May 9, 1933; one male, Kao Pae Pan Nam, Lomsak, February 19, 1934; one female, Huey Me Sae, December 24, 1932; one male, Aranya, July 17, 1930; one male, Hupbon, near Sriracha, May 25, 1925; one male, Sakeo, near Krabin, May 2, 1928; one male, Pang Sok, August 18, 1926; two males, Tha Chang, Pak Chong, March 22, 1927; four males, Chantuk, June 13, 14, 1934.

Dr. W. L. Abbott took an adult female at Champang, Tenasserim, December 21, 1903, but I cannot match it by any female in the above Siamese series. It is darker below and on the ear coverts and approaches *C. f. saturatior* of the Malay Peninsula of which it is more or less of an intermediate. The ranges of *C. f. frontalis* and *C. f. saturatior* probably meet in the near vicinity.

Unfortunately I have been unable to examine any specimens from Ceylon and very few from India proper.

The range of *C. f. frontalis* is given as practically all India, including Ceylon, Burma, and Siam east to Laos, Tonkin, Annam, Cochinchina, and Cambodia. This form apparently occurs more or less commonly all over Siam proper, more especially in the north. According to Deignan[45] it occurs on Doi Sutep at 3,500–4,600 feet.

CALLISITTA FRONTALIS SATURATIOR (Hartert)

Sitta saturatior HARTERT, Nov. Zool., vol. 9, p. 573, 1902 (Gunong Tahan, Pahang).

Three males, Bangnara, Patani, July 10, 1926; one male, Kao Chong, Trang, September 1, 1933.

Dr. W. L. Abbott took four males and one female in Trang as follows: Prahmon, March 22, 1896; Lay Song Hong, September 7, 1896, and November 6, 1896; and Kao Soi Dao, 1,000 feet, February 8, 1899.

All the specimens agree in being considerably darker below and having broader black foreheads than *C. f. frontalis*.

Count Gyldenstolpe[46] says it has been collected at Bukit Besar, Nawnchik, Bandon, Lamra, and on Puket; Robinson[47] says it is confined to the southern two-thirds of the Malay Peninsula. As the United States National Museum has typical specimens from Trang, it must go considerably north of this point at least.

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[45] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 135, 1931.

[46] Ibis, 1920, p. 468.

[47] The birds of the Malay Peninsula, vol. 1, p. 260, 1927.

SITTA CASTANEA NEGLECTA Walden

Sitta neglecta Walden, Ann. Mag. Nat. Hist., ser. 4, vol. 5, p. 218, 1870 (Karen Hills, Toungoo District, Burma).

One male, Doi Angka, December 2, 1928; one male and one female, Mekhan, February 6, 1932; one male, Khonka Valley, January 19, 1933; one female, Doi Hua Mot, August 30, 1934.

The range of this form extends from Muleyit Mountain, Tenasserim, through the eastern hill ranges of Burma to western and northern Siam, Cambodia, and Laos.

S. c. cinnamoventris has been recorded from northern and eastern Siam,[48] but presumably there must be some error, as two races would hardly occur in the same territory unless at different elevations in the mountains.

Chasen and Kloss[49] record *S. c. neglecta* from the Raheng district, western Siam. Deignan[50] took one on Doi Sutep, 1,800 feet, in June; and Mr. Aagaard[51] took a single male on the summit of the same mountain later; De Schauensee[52] took three males and a female at Metang and says that it was found only in lowland jungle where the trees reached a good height.

SITTA EUROPAEA NAGAENSIS Godwin-Austen

Sitta nagaensis Godwin-Austen, Proc. Zool. Soc. London, 1874, p. 44 (Naga Hills).

One male, Doi Nangka, November 20, 1930; one male, Pang Meton (Doi Nangka), May 5, 1931.

The form ranges from the mountains south of Brahmaputra, Chin, and Cachin Hills to northern Siam, and it has been reported from southern Annam, but specimens from this region may not be the same. Two males from Dalat, southern Annam, in the United States National Museum are more grayish below, the rufous of the flanks is lighter, and they are paler above than the Siamese specimens. The Langbian Peaks region is rather isolated from the normal range of the form.

De Schauensee[53] found *S. e. nagaensis* common on the summit of Doi Sutep and less so farther down. Deignan[54] found it common on the same mountain from 4,500 feet to the summit and saw a pair carrying food into a nest hole in May at 5,500 feet. De Schauensee[55] on his third expedition again secured it on Doi Sutep and Chiengdao and states it occupies a zone above that at which *Sitta magna* is found.

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[48] Gyldenstolpe, Ibis, 1920, p. 467.

[49] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 179, 1928.

[50] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 175, 1931.

[51] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 247, 1932.

[52] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 182, 1934.

[53] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 530, 1930.

[54] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 135, 1931.

[55] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 182, 1934.

SITTA MAGNA Wardlaw-Ramsey

Sitta magna WARDLAW-RAMSEY, Proc. Zool. Soc. London, 1876, p. 677 (Karennee).

One male, Doi Angka, 4,000 feet, December 3, 1928; one male and one female, Doi Nangka, November 17, 1930.

De Schauensee[56] found this large nuthatch rather common on Doi Sutep, 4,500 feet, where it has since been noted by several recent observers. On his third expedition De Schauensee[57] also secured specimens at Chiengdao, 4,500–5,000 feet.

It ranges from the mountains of central Burma to Yunnan and northern Siam, at about 4,000 feet or higher.

Family CERTHIIDAE: Creepers

CERTHIA DISCOLOR SHANENSIS Baker

Certhia discolor shanensis BAKER, The fauna of British India, Birds, ed. 2, vol. 7, p. 90, 1930 (new name for *C. d. fuliginosa* Baker, *ibid.*, vol. 1, p. 438, 1922, not *C. fuliginosa* Bechstein, 1811; Loi-pang Nan, Mekong).

Two males, Doi Angka, 5,000–8,000 feet, December 6 and 7, 1928; one immature male, Pang Meton (Doi Nangka), May 4, 1931.

No specimens of *C. d. shanensis* from Burma have been available for comparison. I have had only one specimen of *C. d. discolor* from Nepal and three specimens of *C. d. meridionalis* from southern Annam; *shanensis* is less rusty than the latter, with more black on the head and back, and below it is lighter, especially on the breast.

The immature from Pang Meton is about full grown. It differs from the adult in being rustier above, with the black markings reduced and the lighter shaft streaks much reduced, almost absent; the throat and chest are buffy brown with slight dusky markings, the throat with honey-yellow streaks; the belly a light isabella color; the sanford brown of the rump less in extent than in the adult; under tail coverts, tail, and wings similar to the adult, but the light exposed markings of the latter more rufous.

The two adult males measure: Wing, 69–70.5; tail, 75.5–79; culmen, 16–17.5 mm.

The range of the form extends from the Shan States to Karenni in Burma, northern Siam, and the northwest of Tonkin.

De Schauensee[58] recorded it from Doi Sutep, 4,500–5,500 feet, as *C. d. manipurensis*, followed by Deignan[59]; Chasen and Kloss[60] have recorded it as *shanensis* from the same mountain; followed by de Schauensee.[61]

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[56] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 530, 1929.
[57] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 182, 1934.
[58] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 541, 1930.
[59] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 141, 1931.
[60] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 247, 1932.
[61] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 207, 1934.

Family TIMALIIDAE: Babbling Thrushes

GARRULAX CHINENSIS PROPINQUUS (Salvadori)

Dryonastes propinquus SALVADORI, Ann. Mus. Civ. Genova, ser. 3, vol. 6, p. 6, 1914 (Thagut, Tenasserim).

One male, Khun Tan Mountains, 4,000 feet, May 10, 1933; one male, Doi Hua Mot, September 4, 1934; one male, Muang Pai, December 28, 1932; one male, Kao Lem, December 27, 1930.

Gairdner [62] records it from the Petchaburi District; Gyldenstolpe [63] took a female at Khun Tan and saw two at Chienghai. Chasen and Kloss [64] record one from the Raheng District; this specimen is now in the United States National Museum and is immature. Deignan [65] says it is rare or local on the Chiengmai Plain but can usually be found in the scrub to the south of Nawng Haw. De Schauensee [66] took three specimens at Chiengrai and says that it is an uncommon babbler in northern Siam.

The range of the form extends from Tenasserim to western, northern, and eastern Siam.

GARRULAX LEUCOLOPHUS DIARDI (Lesson)

Turdus diardi LESSON, Traité d'ornithologie, p. 408, 1831 (Cochinchina).

Two males and one female, Koh Lak, June 7–14, 1933; four males, two females, and one unsexed, Pran, May 27, June 3, 1928, April 2, 3, 1931; one male, Sam Roi Yot, November 14, 1932; five males and five females, Muang Kanburi, April 7, 8, and September 10, 11, 1928; one male and one female, Bo Ploi, Kanburi, September 9, 1928, September 26, 1929; one male and one female, Sai Yok, Kanburi, September 23, 1929; two males, Doi Angka, 2,000 feet, December 2, 8, 1928; two females, Chiengdao, January 29, 1932; one female, Khun Tan, October 22, 1929; one male and one female, Ban Nam Kien, Nan, April 18, 19, 1930; one male and one female, Prae, April 10, 1930; one male Mekhan, February 7, 1932, two males; Muang Pai, December 27, 29, 1932; one female, Gengkoi, October 16, 1932; one unsexed, Lomkao, February 21, 1934; two males and one female, Lat Bua Kao, August 9, 11, 1929; six males, five females, and one unsexed, Pak Chong, February 17, April 29, May 2, November 20–December 21, 1926; one female, Sikeu, near Korat, February 4, 1926; one male, Pang Sok, August 14, 1926; one female, Ban Foe Hilom, March 3, 1929; one male, Nong Kai, February 18, 1929; two males and one female, Nong Khor, near Sriracha, November 19, 1924, November 8, 1926; two males, Huey Yang, Sriracha, August 4, 5,

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[62] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 148, 1915.

[63] Kungl. Sevenska Vet.-Akad. Handl., vol. 56, no. 2, p. 55, 1916.

[64] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 175, 1928.

[65] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 136, 1931.

[66] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 183, 1934.

1932; one male and one female, Ban Tarn Dam, March 7, 1930; one male, Hupbon, October 26, 1931; two males, Kao Sabap, October 28 and November 16, 1933; five females, Kao Seming, Krat, October 11–17, 1928, January 2, 1930.

In this very large series there are two phases, one in which the flanks are strongly hazel and the under tail coverts somewhat darker and one in which the flanks are very lightly washed with hazel or almost white and the under tail coverts gray. On an average the specimens from the east and southeast have the whitest flanks while those from the north, west, and southwest have the flanks more hazel and less often white, though in Kanburi specimens with strong hazel flanks and others with nearly white occur together. It is my belief that the birds with hazel flanks are intergrades toward *G. l. berlangeri* and that the latter does not reach Siam at all. There are specimens in the United States National Museum from Raheng in which the red-flanked bird has been identified as *berlangeri* and the white-flanked one as *diardi*. Two such closely related forms would hardly be found together, and some other explanation has to be sought. The deeply hazel-flanked birds are in the minority. In a pair of specimens from Tonkin before me the female has the flanks as deeply hazel as any specimen from western Siam.

There are several immature specimens in the series and the flanks have only a slight brownish tinge. It may be the white flanks are an age character, but unfortunately all the immatures in the series are from eastern Siam where the form has a tendency to be white-flanked anyway.

Dr. Smith describes the soft parts as: Iris reddish brown; bill black; legs light blue.

One set of three eggs was taken at Lat Bua Kao, August 9, 1929, and one egg at Ban Foe Hilom, March 3, 1929, both with the female parent. One set of two eggs was taken at Pran, May 26, 1928, and another set of two eggs at Koh Lak, June 14, 1933.

The eggs are rounded ovate and white with considerable gloss. They measure 26.7 by 22.3 to 29.6 by 23.5 mm, the smallest diameter going as low as 21.6; the average of the eight eggs is 28.2 by 22.3 mm.

Gyldenstolpe[67] reports finding a nest with four eggs at Chum Poo on May 2. From the above the form appears to have a long breeding season, extending from early in March to early in August, and probably somewhat earlier and later.

Dr. Smith's large series covers the distribution in Siam fairly well, which extends from Koh Lak in southwestern Siam northward to the northern border and east and southeast into Indo-China.

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[67] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 54, 1916.

GARRULAX PECTORALIS MERIDIONALIS Robinson and Kloss

Garrulax pectoralis meridionalis Robinson and Kloss, Bull. Brit. Orn. Club, vol. 40, p. 11, 1919 (Hat Sanuk, Rajburi, Siam).

One male, Sanpaiang, December 20, 1932; one male, Mesuya Valley, January 2, 1933; one female, Mae Hong Sorn, January 5, 1933; one female, Ta Fang, January 17, 1933.

This seems to be a more or less variable race. Of the four specimens collected in Siam, three have the ear coverts streaked with black, and one has the ear coverts white unstreaked and the pectoral band interrupted in the center. A specimen received from the Raffles Museum from the Raheng District also has the ear coverts unstreaked, and a male collected by Dr. Smith from the Ban Un Pai Valley, Burma, has unstreaked ear coverts. Stuart Baker [68] describes the ear coverts in *G. p. pectoralis* as black, white or white streaked with black, so it is likely that *meridionalis* will prove equally variable. The latter differs from the northern form in being paler above, the underparts more strongly suffused with buff, the primaries edged with buffy instead of white, and the tips of the outer tail feathers tipped with buffy instead of white.

G. p. meridionalis has been recorded from Doi Sutep as high as 5,000 feet, but this is exceptional. Gyldenstolpe[69] records it as commonly distributed in northern Siam, and it goes as far south as Hat Sanuk at least and over the border into Tenasserim. De Schauensee [70] took specimens at Chiengmai, Khun Tan, and Chiengdao.

GARRULAX MONILIGER FUSCATA Baker

Garrulax moniliger fuscata Baker, Bull. Brit. Orn. Club, vol. 38, p. 64, 1918 (Tavoy, Tenasserim).

Two males, Koh Lak, June 22 and 24, 1933.

This is a lighter-colored form than *mouhoti;* more fulvous, less olive-brown above than *bakeri,* with the black subterminal bar on the tail narrower.

The two Koh Lak specimens are in very worn plumage and unsuitable for comparison. The only specimen in fresh plumage examined is the male from Raheng recorded by Chasen and Kloss,[71] which differs from the northern form as indicated above; Robinson and Kloss [72] report it from Hat Sanuk, near Koh Lak.

It seems to be confined to western and southwestern Siam and the adjacent regions of Burma.

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[68] The fauna of British India, Birds, ed. 2, vol. 1, p. 150, 1922.

[69] Ibis, 1920, p. 487.

[70] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 183, 1934.

[71] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 176, 1928.

[72] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 283, 1924.

GARRULAX MONILIGER BAKERI de Schauensee

Garrulax moniliger bakeri de Schauensee, Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 409, 1935 (Nawng Haw, Chiengmai, northern Siam).

One male, Huey Me Sae, December 24, 1932; one female, Doi Phra Chao, August 4, 1934.

This form is described as being paler than *G. m. moniliger* and *G. m. fuscata*. Of the former no specimens are available for comparison, and of the latter I have only one male from Raheng suitable for comparison. The Raheng male is more fulvous-brown above and the tips of the outer tail feathers are a deeper buff; below there seems to be little difference.

My series is too small for me to judge the distinctness of the present form, but as the two specimens available seem to agree with the characters assigned to the race, it is recognized. As the describer says, *G. m. bakeri* is more olive above and on the central rectrices.

The form, so far as known, is confined to northern Siam, but probably extends into the adjacent parts of Burma. Gyldenstolpe [73] reports it rather common in northern Siam, but other collectors apparently have not found it so; de Schauensee [74] took four specimens north of Chiengmai (Nawng Haw), where he says it is apparently rare. Gyldenstolpe [75] secured a set of three pale blue eggs at Pak Koh, April 16, 1914. The eggs measured 28.5 by 21.2, 28.5 by 21.2, and 27.6 by 20.7 mm. The nest was placed in a low tree within a bamboo jungle and could easily be reached from the ground.

GARRULAX MONILIGER MOUHOTI Sharpe

Garrulax mouhoti Sharpe, Catalogue of the birds in the British Museum, vol. 7, p. 444, 1883 (Cambodia).

Two males and one female, Nong Khor, near Sriracha, September 26, 1925, November 15, 1926; one female, Sikeu, near Korat, March 4, 1926; one male, Pang Sok, August 24, 1926; one male and one female, Knong Phra, near Pak Chong, April 13, 1929; two males and one female, Lat Bua Kao, August 3–9, 1929; one male, Tha Chang, January 2, 1931; one female, Huey Yang, Sriracha, August 4, 1932

All the above specimens come from the eastern part of the country.

This is a darker and more richly colored form than *G. m. fuscata*, but it is not strikingly different. It ranges from Cambodia into eastern Siam. Robinson and Kloss [76] say that the Menam is probably the western boundary between it and *G. m. fuscata;* de Schauensee [77] secured specimens at Bua Yai and Kengkoi.

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[73] Ibis, 1920, p. 487.

[74] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 184, 1934.

[75] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 55, 1916.

[76] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 284, 1924.

[77] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 184, 1934.

GARRULAX STREPITANS Tickell

Garrulax strepitans Tickell, Journ. Asiat. Soc. Bengal, vol. 24, p. 268, 1855 (Tenasserim).

Nine males and two females, Khun Tan, 3,000–4,000 feet, October 2, 1929, August 28–September 8, 1930, February 14–March 4, 1932; five males and four females, Doi Nangka, November 3–11, 1930, April 25 and May 4, 1931; one male and one female, Khun Tan Mountains, 3,000 feet, May 17, 1933; one female, Doi Hua Mot, August 14, 1934.

The above series shows considerable variation. The breast and belly vary from neutral gray with a saccardo unber wash on the flanks to a snuff brown with a narrow border of gray around the brownish-black jugular patch. The pileum varies from mummy brown with the forehead black to a cinnamon-brown with little or no black.

Williamson[78] records it from Si-sawad, western Siam; several collectors have taken it on Doi Sutep from 3,500 feet to the summit; de Schauensee[79] obtained a small series at Chiengmai and Chiengdao and says that it is a bird of high elevations, where it keeps to the densest part of the evergreen forest.

The form ranges from Tenasserim to southwestern and northern Siam.

GARRULAX FERRARIUS Riley

Garrulax ferrarius Riley, Proc. Biol. Soc. Washington, vol. 43, p. 190, 1930 (Kao Kuap, near Krat, Siam).

Two males, Kao Kuap, near Krat, December 27, 1929.

In the original description this species was compared with *G. milleti*, a species of the Langbian region of southern Annam. As specimens of the latter may not be available to Siamese investigators, I give a more complete description of *ferrarius:*

Head, throat, and jugulum clove brown; lores and ear coverts black; a white spot on sides of neck posterior to the ear coverts; breast and upper back deep quaker drab; lower back, rump, closed wing, and flanks olive-brown; tail blackish brown above washed with olive-brown. Wing, 124–128; tail, 116–118.5; culmen, 25.5–25; tarsus, 41–43; middle toe, 25–26 mm.

Kao Kuap belongs to a group of mountains the main chain of which extends eastward into Cambodia. It seems strange that the nearest relative of this species should be *G. milleti,* a mountain species separated from *ferrarius* by several hundred miles.

The species was named in honor of Dr. Hugh M. Smith.

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[78] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 16, 1918.

[79] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 184, 1934.

TROCHALOPTERON MILNEI SHARPEI Rippon

Trochalopterum sharpei RIPPON, Bull. Brit. Orn. Club, vol. 12, p. 13, 1901 (Kauri-Kachin tract, east of Bhamo, Burma).

Seven males and nine females, Doi Nangka, November 9, 1930 (one), and April 22–27, 1931; one male, Pang Meton (Doi Nangka), May 5, 1931.

While there is no comparative material available, the specimens seem to fit the description of this form, which is found in the northern Shan States, in the Kachin Hills, Burma, and in Yunnan.

T. m. vitryi (Delacour) has been described from the Plateau des Bolovens, southern Laos. *T. m. indochinensis* Delacour was named from central Tonkin. *T. m. milnei* David is a local race occurring in the mountains of northwestern Fohkien, southeastern China, and, so far as known, is more or less isolated.

This is another fine race that Dr. Smith was the first to add to the Siamese avifauna. It has been previously recorded by me.[80]

TROCHALOPTERON MELANOSTIGMA MELANOSTIGMA (Blyth)

Garrulax melanostigma BLYTH, Journ. Asiat. Soc. Bengal, vol. 24, p. 268, 1855 (Mount Muleyit, Tenasserim).

One male and one female, Doi Angka, 6,500–7,500 feet, December 1 and 4, 1928; one male, summit of Doi Sutep, December 15, 1928.

These three specimens differ from a male from Mount Nwalabo, Burma, *ramsayi*, as follows: The back is more of a deep grayish olive rather than brownish olive; the lowerparts are grayish instead of ochraceous-tawny; the jugulum is darker and very restricted, not extending onto the chest; the lores, chin, and throat are more extensively black; the spot on the greater wing coverts is sudan brown instead of sanford brown.

The specimens do not agree exactly with Stuart Baker's description of *melanostigma*, but I have no material for comparison.

This species is usually made a form of *T. erythrocephalum*, but in my opinion it belongs to a different form group.

Deignan [81] reports this form as rather common on Doi Sutep from 4,600 feet to the summit.

It ranges in the mountains from Tenasserim northward into the Shan States of Burma and in northern Siam. The nearest relative appears to be *T. m. connectens* Delacour of Laos and Tonkin.

LIOCICHLA RIPPONI RIPPONI (Oates)

Trochalopterum ripponi OATES, Bull. Brit. Orn. Club, vol. 11, p. 10, 1900 (Shan States, Burma).

Two males and one female, Doi Nangka, November 12, 1930, and April 26, 1931.

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[80] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 155, 1933.

[81] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 174, 1931.

Delacour [82] has removed this bird from the genus *Trochalopteron* to *Liocichla*, where it is better placed. It differs somewhat structurally from the other two known species of the genus (*steerii* and *omeiensis*), however, in longer, heavier, and more distinctly notched bill and heavier feet.

Delacour [82] leaves *ripponi* as a race of *phoenicea*. This I now believe is not correct, judging from a specimen of the latter from Darjeeling in the United States National Museum. The color of this specimen of *phoenicea* is quite different from that of *ripponi;* it is prouts brown on the back and lowerparts, while *ripponi* has the back brownish olive and the lowerparts olive lake. The tail feathers in *phoenicea* are differently shaped from *ripponi*, being rounded at the tips instead of truncate. This leads me to doubt whether *phoenicea* really belongs in the same genus, but the specimen examined may not be fully adult, though there is no other indication of immaturity. The other two races placed in *phoenicea*—*bakeri* and *wellsi*—I have not seen, but judged from descriptions *wellsi* belongs with *ripponi* and *bakeri* with *phoenicea.*

The above specimens taken by Dr. Smith were the first of this species to be taken in Siam and were recorded by me.[83]

L. r. ripponi ranges from the northern Shan States, Burma, through northern Siam to northern Laos and Tonkin. *L. r. wellsi* was described from southeastern Yunan.

POMATORHINUS SCHISTICEPS NUCHALIS Tweeddale

Pomatorhinus nuchalis TWEEDDALE, Ann. Mag. Nat. Hist., ser. 4, vol. 20, p. 535, 1877 (Thayetmyo).

One male and one female, Muang Kanburi, April 12 and 16, 1928; two males and one female, Khun Tan, 4,000 feet, October 20 and 26, 1929, March 3, 1932; two males, Doi Nangka, November 13 and 21, 1930; one immature female, Wang Kien, March 13, 1934.

I am following de Schauensee [84] in the treatment of this form group, as it seems to be the latest and best that has been proposed. This form differs from *klossi* in being lighter, more olive-brown above, with a little bay wash on the sides of breast, the tail nearly concolor with the back, except at tip, and the bill yellow, dusky only at the extreme base above.

Dr. Smith also secured a male in the Kiu Pang Valley, Salwin district, eastern Burma. This specimen does not differ from birds of northern Siam.

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[82] Bull. Brit. Orn. Club, vol. 53, p. 87, 1933.

[83] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 155, 1933.

[84] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 185, 1934.

Chasen and Kloss [85] record three males from the Raheng district, western Siam, as *P. olivaceus olivaceus*. Two of these specimens were afterward sent to the United States National Museum. They are slightly darker and more russet above and on the tails than northern Siamese specimens, but in my opinion they are not fully adult, and this may account for the difference in color. On the other hand, an immature even younger taken at Khun Tan does not differ from the adult except in size. It would hardly seem possible that the Raheng district would have *nuchalis* occur to the north and south of it. They also record [86] *olivaceus* from Doi Sutep and discredit *ripponi* as a Siamese bird. In the latter contention they are probably right.

P. s. nuchalis ranges from northern Tenasserim to western and northern Siam.

POMATORHINUS SCHISTICEPS OLIVACEUS Blyth

Pomatorhinus olivaceus Blyth, Journ. Asiat. Soc. Bengal, vol. 16, p. 451, 1847 (Yé, Tenasserim).

Two males, Muang Kanburi, September 19, 1929, April 8, 1928; one male, Bo Ploi, Kanburi, September 26, 1926.

These three specimens have longer and heavier bills than *nuchalis*, and there is no trace of a bay wash on the sides of the breast. At apparently the same locality Dr. Smith also took *P. s. nuchalis*. This I cannot understand, unless one is the resident form and the other only a wanderer.

This form evidently is confined to central Tenasserim and western Siam, but just what its exact range is is not known. De Schauensee [87] secured a pair at Tamuang, March 8.

POMATORHINUS SCHISTICEPS FASTIDIOSUS Hartert

Pomatorhinus schisticeps fastidiosus Hartert, Bull. Brit. Orn. Club, vol. 36, p. 1916 (Ko-khau, Trang, Peninsular Siam).

Dr. W. L. Abbott collected the following: Two males, Kao Nom Plu, 3,000 feet, March 3, 1897; one male, Kao Nok Ram, 3,000 feet, January 16, 1899; two males, Kao Soi Dao, 2,500 feet, February 12, 1899, all three localities in Trang. One male from Telok Krang, February 17, and a female from Meliwun, March 7, 1904, taken in Tenasserim by Dr. W. L. Abbott, cannot be distinguished from the three males from Trang. The female from Meliwun is very worn and much lighter, but this is natural. *P. s. olivaceus* must range in Tenasserim farther to the north.

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[85] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 176, 1928.

[86] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 244, 1932.

[87] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 186, 1934.

Robinson[88] records it from Kao Nawng, 1,200 feet to summit, Bandon; Robinson and Kloss[89] from Kao Luang, 2,000–5,500 feet, Nakon Sritamarat, and Tasan, Chumporn.[90]

This form ranges from Trang north to southern Tenasserim, but how far to the southward is not definitely known.

POMATORHINUS SCHISTICEPS KLOSSI Baker

Pomatorhinus nuchalis klossi BAKER, Bull. Brit. Orn. Club, vol. 38, p. 9, 1917 (Klong Menao, Siam).

Two females, Ban Sadet, Sriracha, May 31, 1925; one female, Nong Khor, near Sriracha, November 12, 1926; one male and one female, Huey Yang, Sriracha, July 31 and August 5, 1932; one male and one female, Kao Bantad, Krat, December 23, 1929; one male, Kao Kuap, Krat, December 26, 1929; three males and two females, Kao Seming, Krat, October 13–14, 1928, December 31, 1929, and January 1, 1930; one male, Krat, December 20, 1929; one female, Ban Tarn Dam, March 6, 1930; two males, Hupbon, November 1, 14, 1931; six males and one female, Kao Sabap, October 23–November 16, 1933.

All these localities are in southeastern Siam, from where the form extends into the Elephant Mountains of Cambodia.

It is a deeper and more richly colored form above than *nuchalis*, the tail blackish and the sides strongly hazel; the bill with the black base extending farther forward.

De Schauensee[91] secured a pair at Chantabun.

POMATORHINUS FERRUGINOSUS MARIAE Walden

Pomatorhinus mariae WALDEN, Ann. Mag. Nat. Hist., ser. 4, vol. 15, p. 403, 1875 (Tounghoo Hills).

One adult male and one immature female, Doi Nangka, April 23 and 25, 1931.

This record represents an addition to the Siamese avifauna. It somewhat resembles *P. ochraceiceps ochraceiceps* but is darker above, the white superciliary is bordered above by blackish, the ear coverts are blacker and extend farther posteriorly, the breast and belly are light buff, and the bill is shorter and heavier.

The form extends from the Toungoo and Karen Hills, upper Burma, to northern Siam. Delacour[92] has named a race *P. f. orientalis* from central Tonkin. This, judged from the plate,[93] represents a form with a more reddish-brown back and tail. The above two specimens have been recorded previously by me.[94]

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[88] Journ. Federated Malay States Mus., vol. 5, p. 103, 1915.

[89] Journ. Federated Malay States Mus., vol. 11, p. 61, 1923.

[90] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 285, 1924.

[91] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 187, 1934.

[92] Bull. Brit. Orn. Club, vol. 47, p. 159, 1927.

[93] Delacour and Jabouille, Oiseaux l'Indochine Française, vol. 3, pl. 43, 1931.

[94] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 156, 1933.

POMATORHINUS OCHRACEICEPS OCHRACEICEPS Walden

Pomatorhinus ochraceiceps WALDEN, Ann. Mag. Nat. Hist., ser. 4, vol. 12, p. 487, 1873 (Kareen Hills, Burma).

One male and one female, Khun Tan, 3,000 feet, February 15, 1932; one male, Khun Tan Mountains, 3,000 feet, May 13, 1933.

Williamson [95] adds the locality Muang Wang. Several collectors [96] have taken it on Doi Sutep, 3,500–4,600 feet. Chasen and Kloss [97] report it from the Raheng District.

The range of the form extends from the Karen Hills and Karenni Mountains of Tenasserim to northern Siam.

POMATORHINUS HYPOLEUCUS LAOTIANUS Delacour and Jabouille

Pomatorhinus tickelli laotianus DELACOUR and JABOUILLE, Bull. Brit. Orn. Club, vol. 47, p. 16, 1926 (Xieng-Khouang, Laos).

Three males and five females, Pak Chong, eastern Siam, April 24, May 5, and August 21, 1926, November 18–24, 1929, June 22, 1934; one male, Hin Lap, December 11, 1931; one immature male, Lamton Lang, May 28, 1934; two females, Kao Sabap, 2,000 feet, November 14, 1933; one male, Khun Tan, 3,000 feet, February 22, 1932; one immature male, Khun Tan Mountains, 3,000 feet, May 11, 1933.

The culmen in five males measures 39.5–45.5 (42) mm and in four females 39–44.5 (41.2) mm. If the specimens are correctly sexed, these measurements indicate considerable individual variation.

I have been unable to compare these with any of the races, except *hypoleucus* and *brevirostris*, to neither of which they belong. They seem nearer to the description of *laotianus*, to which they are nearest geographically also.

In *brevirostris* the ear coverts are russet, while in *laotianus* they are wood brown; the former has a much shorter bill. *P. h. tickelli* has a shorter bill than *P. h. laotianus*.

The male from Hin Lap (U. S. N. M. no. 331995) has the supra-auricular white streaks extending forward to the nostril, forming a complete superciliary stripe; the nape and russet postauricular patch have some white streaks. It is the only specimen in the series so marked.

The specimen from Khun Tan, northern Siam, agrees with the series from eastern Siam, so I presume Gyldenstolpe's record [98] of *P. h. tickelli* from there really belongs to *laotianus*, the latter not being described at the time he wrote; de Schauensee [99] has also recorded *P. h. tickelli* from Chiengdao, 4,000 feet. The immature male from the Khun Tan Mountains resembles the adult except the jugulum is sparsely spotted with sagittate spots and the bill is a little smaller (39.5 mm), the upperparts more reddish brown, and the flanks washed with hazel. The immature male from Lamton Lang is similar, but the jugular spots have almost disappeared.

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[95] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 16, 1918.

[96] De Schauensee, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 532, 1930; ibid., vol. 86, p. 187, 1934; Deignan, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 136, 1931; Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 244, 1932.

[97] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 176, 1928.

[98] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 52, 1916.

[99] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 188, 1934.

The form ranges from Tonkin, northern Annam, and northern Laos to eastern and northern Siam.

EUPETES MACROCERCUS MACROCERCUS Temminck

Eupetes macrocercus Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 87, pl. 516, 1831 (Padang, Sumatra).

One male and one female, Sichol, Bandon, May 15, 1930.

Dr. W. L. Abbott collected a male on the Rumpin River, Pahang, July 4, 1902.

Stuart Baker[1] separated the Peninsular Siamese bird as *E. m. griseiventris*, but Robinson and Kloss[2] have questioned the validity. The three specimens listed above seem to bear out their remarks when compared with two from Sumatra.

The form occurs in Sumatra and on the Malay Peninsula north to Bandon, Peninsular Siam.

This very peculiar, anomalous bird is an inhabitant of the lowlands rarely ascending the hills above 2,500 feet. *E. m. borneensis* Robinson and Kloss is confined to Borneo.

TIMALIA PILEATA INTERMEDIA Kinnear

Timalia pileata intermedia Kinnear, Bull. Brit. Orn. Club, vol. 45, p. 9, 1924 (Tonghoo).

One male and three females, Muang Kanburi, April 9–15, 1928; one male, Korat, February 14, 1929; one female, Ban Nak, March 24, 1929; one male, Pak Chong, eastern Siam, November 21, 1929; four males and two females, Bung Borapet, central Siam, June 24–28, 1932, March 21, 22, 1933; one male, Ban Bua Chum, October 20, 1932.

Deignan,[3] under the name *T. p. bengalensis*, has recorded this form from Chiengmai, and Williamson[4] has recorded it from Ayuthia, Chiengmai, Sriracha, and Nong Kae. De Schauensee[5] has listed it from Sriracha and Bung Borapet.

The range of the form is apparently practically all over Burma and Siam, except the Peninsular part, and east into Laos and Tonkin.

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[1] Bull. Brit. Orn. Club, vol. 38, p. 8, 1917.

[2] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 284, 1924.

[3] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 136, 1931.

[4] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 17, 1918.

[5] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 188, 1934.

GAMPSORHYNCHUS RUFULUS TORQUATUS Hume

Gampsorhynchus torquatus Hume, Proc. Asiat. Soc. Bengal, 1874, p. 107; Stray Feathers, vol. 2, p. 446, 1874 (Younzaleen, Salween District, Tenasserim).

Six males, Khun Tan, 4,000 feet, October 19, 1929, August 28, 1930, and February 15–17, 1932; one female, Doi Nangka, November 18, 1932; one male, Khun Tan Mountains, 3,000 feet, May 13, 1933; one male, Kao Pae Pan Nam, Lamsak, February 19, 1934.

In this series the dark jugular band is interrupted in one female from Doi Nangka, one male from Khun Tan, and one male from the Kao Pae Pan Nam. In a male received from the Raffles Museum from the Raheng district there is no dark jugular band at all. The remaining males have the jugular band complete. The color of the back extends forward onto the nape but is darker and usually mixed with white there, though in a few specimens not; the rest of the head is white.

De Schauensee [6] states that birds from Chiengmai are intermediate between *torquatus* and *luciae* of Tonkin; his collectors found an adult male and an adult female accompanied by fully fledged young at the same place in mid-July.

Deignan [7] says it is once recorded from Doi Sutep, 3,800 feet; not uncommon on some hills near Chiengmai. Chasen and Kloss [8] have recorded it from the Raheng district, western Siam.

The form evidently occurs from the Toungoo Hills and Karenni, Burma, to northern and western Siam and south to Tenasserim; it also occurs in Lower Laos, southern Annam, and Cochinchina. In the mountains at the southern end of the Malay Peninsula a larger and darker form or species, *G. saturatior* Sharpe, occurs. It may extend into the mountains on the southwestern border of Patani.

CHRYSOMMA SINENSIS SINENSIS (Gmelin)

Parus sinensis Gmelin, Systema naturae, vol. 1, pt. 2, p. 1012, 1789 (China, error).

One male, Bung Borapet, central Siam, June 28, 1932.

Deignan [9] says this form occurs uncommonly on the plain at Chiengmai. To the eastward in Yunnan, *C. s. major* occurs. It is a larger, darker-colored form with a longer tail.

De Schauensee [10] identifies a single male from Chiengmai as *C. s. major*. The specimen from Bung Borapet has been compared with a specimen of *Chrysomma sinensis major* from Mengtsz, Yunnan, the type locality of the form, and the latter is considerably larger, with a much longer tail and darker breast.

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[6] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 188, 1934.

[7] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 174, 1931.

[8] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 176, 1928.

[9] Journ. Siam Soc. Nat. Hist. Suppl., vol 8, p. 136, 1931.

[10] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 188, 1934.

The Bung Borapet male measures: Wing, 61.5; tail, 77; culmen, 12 mm. The Mengtsz male: Wing, 70; tail, 98; culmen, 13 mm.

C. s. sinensis ranges from India proper to Burma and south to Tenasserim and northern Siam.

PELLORNEUM RUFICEPS SUBOCHRACEUM Swinhoe

Pellorneum subochraceum SWINHOE, Ann. Mag. Nat. Hist., ser. 4, vol. 7, p. 259, 1871 (Tenasserim).

Three males, Bangnara, Patani, July 16–20, 1926; one male, Bukit, Patani, January 27, 1931; one male, Yala, Patani, January 30, 1931; one immature male, Koh Samui, Bandon, August 7, 1931; one male, Patalung, July 8, 1929; one male, Rajaburi, April 10, 1926; one male, Kwe Noi, Kanburi, September 20, 1929; two males, Muang Kanburi, April 12, 1928; three males and two females, Koh Lak, June 6–14, 1933; one male and one female, Gengkoi, October 16, 1932; one male, Ban Manoa Wan, October 21, 1932; two females, Ban Tawai Phra, Pasak River, October 22, 1932; three males, Sam Roi Yot, November 8–11, 1932; one male Kao Pae Pan Nam, Lamsak, February 19, 1934.

The immature male from Koh Samui has some cinnamon-brown feathers scattered through the buffy brown of the back; the pileum is considerably darker than in the adult; both sides of the chest and flanks are washed with tawny-olive; the fuscous streaks are rather narrow and sparse and confined to the jugulum; otherwise similar to the adult.

Dr. W. L. Abbott collected the following: One male, Prahmon, Trang, March 14, 1896; one male and two females, Tyching, Trang June 4–July 27, 1896; one male and one female, Trang, February 15 and March 4, 1897; two males, Bok Pyin, Tenasserim, February 11–12, 1900; three males and two females, Mergui Archipelago (St. Matthew Island, January 17, 1900; Sullivan Island, February 2, 1900; Ross Island, March 5, 1900; Domel Island, January 25, 1904). Also two sets of three eggs each in Trang, June 4, 1896, and March 4, 1897; the first set with large embryos. He gives the color of the soft parts as: Iris reddish brown; upper mandible horny brown, lower mandible pale fleshy, yellow at the base; feet pale pinkish fleshy.

The Tenasserim and Mergui specimens seem to be buffier on the chest and flanks and the back more tinged with cinnamon-brown than the series from Trang; the Trang series is browner on the back when compared with Dr. Smith's Peninsular Siam series, but below the two series are much alike. I think the browner backs of the Trang series are due to the fresh, unfaded condition of the plumage of Dr. Smith's birds. All three series are less heavily streaked on the chest than in the form occurring in northern and eastern Siam. The differences between the three series from the Malay Peninsula are slight and may be seasonal. They are not worth recognizing by name.

The form occurring in northern and eastern Siam is more heavily streaked on the chest and the pileum is darker brown than in *subochraceum,* which ranges from central and southwestern Siam and southern Tenasserim south through Peninsular Siam to the Federated Malay States.

PELLORNEUM RUFICEPS VIVIDUM La Touche

Pellorneum nipalense vividum La Touche, Bull. Brit. Orn. Club, vol. 42, p. 17, 1921 (Hokow, southeastern Yunnan).

One male, Ban Kiriwong, July 11, 1928; one female, Knong Phra, April 10, 1929; two males, Khun Tan, August 27–28, 1930; one female, Aranya, July 17, 1930; one female, Ban Nam Kien, Nan, April 18, 1930; one female, Lat Bua Kao, July 31, 1929; two males, two females, and one immature, Pak Chong, eastern Siam, February 10, 1925, May 11, 1925, May 6, 1926, and November 20, 1929; one immature female, Tha Chang, near Pak Chong, March 21, 1927; one male, Nong Khor near Sriracha, March 19, 1926; one female, Sriracha, April 20, 1934; one male, Nong Mong, Muang Krabin, August 24, 1925; one male, Hupbun, November 15, 1931.

This form is darker above and the streaks on the chest are broader than in *subochraceum.* It apparently ranges from northern Siam eastward through eastern Siam to Laos, Tonkin, southeastern Yunnan, Annam, Cochinchina, and Cambodia.

PELLORNEUM RUFICEPS SMITHI Riley

Pellorneum smithi Riley, Proc. Biol. Soc. Washington, vol. 37, p. 129, 1924 (Koh Chang Island, southeastern Siam).

One female (the type), Koh Chang, April 4, 1924; one female Kao Sabap, November 7, 1933.

The type is as much of a puzzle to me now as the day it was described. It is much darker than either *subochraceum* or *vividum,* both above and below. The type was examined by Bangs and Van Tyne, and they say it is very different from any other specimen they had seen. They suggest that some of its peculiarities may be due to the make of the skin,[11] but this would not account for the different color of the upperparts and flanks.

The back and tail are cinnamon-brown, while in *vividum* they are near saccardo umber; the pileum is deeper and the flanks also. It may be only an example of erythrism or may turn out to be a local race confined to southeastern Siam. For this reason I am listing it separately.

The female taken at Kao Sabap is almost as dark on the back as the type, but below the streaks on the chest are not so broad, nor are the flanks so deeply colored, and the breast and belly are white not buffy; ear coverts not so deeply colored. I am placing this specimen, however, with the type with some hesitation. The southeastern corner of Siam contains a number of forms that are not found in other parts of the country and that probably extend into the adjacent regions of Cambodia. Some of them are known to do so, but so far as I know this part of Cambodia has not been well explored biologically; the explorations of M. Delacour and colleagues did not extend this far northwest.

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[11] Field Mus. Nat. Hist. Publ., Zool. Ser., vol. 18, no. 3, p. 84, 1931.

DRYMOCATAPHUS NIGRICAPITATUS NIGRICAPITATUS (Eyton)

Brachypteryx nigricapitata EYTON, Proc. Zool. Soc. London, 1839, p. 103 (Malacca).

Four females, Bangnara, Patani, May 10 and 23, 1924, and July 13, 1926; four adult males, one immature male, and one immature female, Sichol, Bandon, August 29–September 1, 1929, and May 20–27, 1930; one unsexed, Kao Chong, Trang, September 2, 1933. Dr. Smith describes the soft parts as: Iris reddish brown; bill black above, horn below; legs light brown.

Dr. W. L. Abbott took an adult female and an immature female at Lay Song Hong, Trang, August 25, 1896; and an adult male on Singapore Island, May 17, 1899. He describes the soft parts as: Iris reddish brown or dark red; upper mandible black, lower mandible fleshy or bluish white; feet fleshy brown.

Three stages of plumage are represented by the immature specimens: (1) An immature male, not long from the nest, with gray throat and forehead and the rest of the body duller than in the adult; (2) throat tawny like the chest, pileum fuscous, the superciliary becoming grayish white; and (3) throat white and the rest of the plumage much as in the adult.

Robinson and Kloss[12] report it from Tasan, Chumporn, Peninsular Siam and say that this is about the northern limit in the Peninsula. The species occurs from Singapore northward through Peninsular Siam to southern Tenasserim.

The few specimens examined from Sumatra are darker above than Peninsular birds and belong to the form named *D. n. nyctilampis* by Oberholser.[13]

This bird is generally cited as a race of *D. capistratus* of Java, but the latter is a distinct species in my estimation, with so many differences that it is better to recognize it as such. The form found in Borneo, *capistratoides*, evidently belongs to the same form group as the Malay bird.

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[12] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 292, 1924.

[13] Smithsonian Misc. Coll., vol. 74, no. 2, p. 10, 1922 (Banka Island).

DRYMOCATAPHUS TICKELLI TICKELLI (Blyth)

Pellorneum tickelli Blyth, Journ. Asiat. Soc. Bengal, vol. 28, p. 414, 1859 (Amherst, Tenasserim).

The United States National Museum contains the female of this form from Hue Nya Pla, Raheng, 2,500 feet, May 20, 1924,[14] recorded by Chasen and Kloss.

Robinson and Kloss [15] report it from Renong River, Tapli (Pakchan), and Tasan (Chumporn), all in Peninsular Siam. The form is said to extend from Assam south of the Brahmaputra, and south to southern Tenasserim and for a short distance farther south into Peninsular Siam; eastward it extends to western Siam (Raheng).

DRYMOCATAPHUS TICKELLI OLIVACEUS Kinnear

Drymocataphus tickelli olivaceus Kinnear, Bull. Brit. Orn. Club, vol. 45, p. 11, 1924 (Bao Ha, Tonkin).

Three females, Khun Tan, 3,000 feet, October 27, 1929, and February 24 and 26, 1932; one female, Kao Pae Pan Nam, Lamsak, February 18, 1934.

The above specimens from Khun Tan are more olive-brown, much lighter than either *tickelli* or *australis;* below they are lighter, less buffy, the chin and throat white like the center of the breast. In *tickelli* and *australis* the chin is buffy like sides of neck. I have had no specimens of *olivaceus* for comparison, but when placed beside *tickelli* and *australis*, the Khun Tan birds stand out as quite distinct, and if they are not this form they require a name.

The female from Kao Pae Pan Nam is darker above than the Khun Tan specimens but is nearer to this form than to the other two accredited to Siam.

Count Gyldenstolpe's record of *D. t. tickelli* [16] from Pak Koh probably belongs here; Deignan [17] took a female on Doi Angka, 4,400 feet, April 19, 1931; de Schauensee [18] obtained a male at Chiengdao, 4,000 feet.

The form evidently ranges from northern and eastern Siam to Laos, Tonkin, and northern Annam.

DRYMOCATAPHUS TICKELLI AUSTRALIS Robinson and Kloss

Drymocataphus tickelli australis Robinson and Kloss, Journ. Federated Malay States Mus., vol. 10, p. 205, 1921 (Ginting Bidei, 2,300 feet, Selangor).

One male, Kao Luang, 3,000 feet, Nakon Sritamarat, July 20, 1928; five males, Kao Soi Dao, Trang, December 21–30, 1933.

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[14] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 177, 1928.

[15] Journ. Nat. Hist. Soc. Siam, vol. 5, no. 3, p. 291, 1924.

[16] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 57, 1916.

[17] Rodgers and Deignan, Proc. Biol. Soc. Washington, vol. 47, p. 92, 1934.

[18] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 190, 1934.

Dr. W. L. Abbott took the following in Trang, Peninsular Siam: two males, two females, ane one unsexed, Kao Soi Dao, 2,000–3,000 feet, February 1–15, 1899; two males and three females, Kao Nok Ram, 2,000–3,000 feet, January 8–14, 1899; one male and two females, Kao Nom Plu, 2,000 feet, February 20–24, 1897. He gives the soft parts as: Iris pale brown to brownish red; bill pale horn brown above, fleshy white beneath; feet pale brownish fleshy.

The male from Kao Luang has a longer bill than those from Trang but in plumage agrees with the Trang series.

Robinson and Kloss [19] have added no additional localities, but they say this is a more richly colored race than the typical form. The only specimen of the latter possessed by the United States National Museum, a female, is more richly colored than *australis*, however.

Dr. Abbott took a nest and three eggs at Kao Nom Plu, Trang, February 24, 1897.

GYPSOPHILA CRISPIFRONS ANNAMENSIS (Delacour and Jabouille)

Corythocichla annamensis Delacour and Jabouille, Bull. Brit. Orn. Club, vol. 48, p. 131, 1928 (Phuqui, northern Annam).

Cursonia crispifrons saxatilis Bangs and Van Tyne, Field Mus. Nat. Hist. Publ., zool. ser., vol. 18, p. 3, 1930 (Na River at Bac Tan Trai, Tonkin).

Two males and one female, Hin Lap, December 8, 12, 1931.

These three specimens do not agree with the descriptions of *G. c. crispifrons* or *G. c. annamensis* but come nearer to the latter. The only specimen of *annamensis* available for comparison has no white on the throat, which is grayish with darker gray streaks. The three birds taken by Dr. Smith have the throats white with broad black streaks down the centers of the feathers, the white predominating over the black, however; the sides of the throat and neck cinnamon-buff; breast cinnamon with a grayish tinge on the jugulum and light brownish olive on the flanks, each feather with a very narrow whitish shaft-streak.

The plate published by Delacour and Jabouille [20] is a redder brown on the wing, rump, and tail than the Hin Lap specimens, the black on the throat predominates over the white, there is no cinnamon-buff on the sides of throat, and the chest is dark gray.

G. c. crispifrons is said to be a very variable bird and the eastern representative would likely be also. Certainly the only specimen I have handled from Annam is quite different from Delacour and Jabouille's plate. These facts considered, the eastern Siamese skins can be assigned to *G. c. annamensis* for the present. The range then would be northern Annam, Tonkin, northern Laos, and eastern Siam.

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[19] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 291, 1924.

[20] Oiseaux l'Indochine Française, vol. 3, pl. 46, 1931.

Whether Williamson's [21] record of *G. crispifrons* from the Muang Song Forest, Prae, belongs to this form or not, it is impossible to say.

The two males from Hin Lap measure: Wing, 75–78; tail, 68–70; culmen, 17–18 mm. The single female: Wing, 72; tail, 64; culmen, 16.5 mm.

CORYTHOCICHLA BREVICAUDATA VENNINGI (Harington)

Turdinulus brevicaudatus venningi HARINGTON, Bull. Brit. Orn. Club, vol. 33, p. 44, 1913 (South Shan States).

Two males, Pang Meton, Doi Nangka, May 4 and 6, 1931.

This is a larger form than *C. b. leucosticta* and has the breast and belly tawny without any whitish to the center of the breast. It is a very distinct form.

Deignan [22] obtained three specimens on Doi Angka, 4,900–5,500 feet, April 22, 26, 1931; de Schauensee [23] took two females at Chiengdao at 3,000 and 5,000 feet that he identifies as *C. b. brevicaudata*, but they are probably this form. He had no comparative material and neither have I, but my two specimens agree with the description and measurements of *venningi* better than they do with *brevicaudata*. Two closely related forms would hardly occur in the same area. Deignan [24] records two from Doi Sutep.

The two specimens collected by Dr. Smith measure: Wing, 66–69; tail, 54=(one imperfect); culmen, 16.5–17 mm. De Schauensee gives the measurement of the wings of his two females as 66 and 64 mm. These are rather small, but they are females. The South Shan States are nearer geographically.

Gyldenstolpe [25] records it from Doi Par Sakeng and Deignan [26] from Doi Sutep, 3,800 feet, as *brevicaudata*.

If the above specimens are correctly determined, the range of *C. b. venningi* would then be the southern Shan States, Burma, Yunnan, and northern Siam.

CORYTHOCICHLA BREVICAUDATA LEUCOSTICTA Sharpe

Corythocichla leucosticta SHARPE, Proc. Zool. Soc. London, 1887, p. 438 (Larut Mountains, Perak).

Corythocichla brevicaudata herberti BAKER, Bull. Brit. Orn. Club, vol. 38, p. 10, 1917 (Tung Song, Peninsular Siam).

Three males, Kao Luang, 2,000–3,000 feet, Nakon Sritamarat, July 19, 20, 1928; one male and one female, Kao Soi Dao, Trang, December 26, 1933 and January 4, 1934.

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[21] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 59, 1916.

[22] Rodgers and Deignan, Proc. Biol. Soc. Washington, vol. 47, p. 91, 1934.

[23] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 190, 1934.

[24] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 10, p. 106, 1936.

[25] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 58, 1916.

[26] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 137, 1931.

Dr. W. L. Abbott collected two males on Kao Soi Dao, 1,000 feet, Trang, February 2 and 16, 1899, and an immature female in the hills of Trang, February 16, 1897. He describes the soft parts as: Iris clear brown; feet dark fleshy brown.

The three Trang and three Nakon Sritamarat males have more pronounced white tips to the remiges than two typical males from farther south (Selangor–Pahang boundary and Gunong Ulu Kali). The three Nakon Sritamarat specimens are somewhat grayer than the Trang males, but the difference is slight.

The immature female collected by Dr. Abbott has the feathers of the back and pileum edged with mars brown instead of the very dark brown, almost black, of the adult; the centers of the feathers are not well defined as in the adult, except the shaft streak; the throat as in the adult but more restricted; the breast and belly sayal brown with dusky and tawny mottling; the spots on the wing coverts and remiges very faint and fulvous; the tail as in the adult. It is a young bird about half grown.

The race extends from the Federated Malay States north through Peninsular Siam as far as the province of Bandon, where it has been recorded by Robinson from Kao Nawng.[27]

CORYTHOCICHLA BREVICAUDATA COGNATA Riley

Corythocichla brevicaudata cognata Riley, Proc. Biol. Soc. Washington, vol. 46, p. 156, 1933 (Kao Sabab, southeastern Siam).

One male, Kao Kuap, Krat, December 25, 1929; eight males and five females, Kao Sabap, January 7, 1930, November 2, 16, 1933.

The present form was described as similar to *C. b. striata*, but the gray of the throat deeper, the streaks much paler, and the upperparts darker, less rufescent. Wing, 57; tail, 35; culmen, 14; tarsus, 23; middle toe with claw, 19.5 mm.

C. griseigularis Delacour and Jabouille, from Bokor, southern Cambodia, is evidently closely related, but it is described as having a uniform gray throat and chest, and the published plate,[28] if anywhere near accurate, shows quite a different form—more reddish above and on the flanks, lighter on the breast, the cheeks and throat lighter, and the latter unstreaked.

C. b. cognata was originally founded upon three specimens, but since then Dr. Smith secured 11 more from Kao Sabap.

The nine males measure: Wing, 57–61 (59.6); tail, 35–42.5 (39.7); culmen, 13.5–15 (14.2 mm.) The five females: Wing, 56.5–58 (57); tail, 37–40 (38.3); culmen, 13–14 (13.5) mm.

I consider de Schauensee's [29] record of *Napothera griseigularis* from Chantaboon to belong to this form.

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[27] Journ. Federated Malay States Mus., vol. 5, p. 104, 1915.

[28] Oiseaux l'Indochine Française, vol. 3, pl. 46, 1931.

[29] Proc. Acad. Nat. Scil Philadelphia, vol. 86, pp. 3, 190, 1934.

It is confined to southeastern Siam, so far as known, but it will probably be found to extend into western Cambodia.

NAPOTHERA EPILEPIDOTA GRANTI (Richmond)

Turdinulus granti Richmond, Proc. U. S. Nat. Mus., vol. 22, p. 320, 1900 (Kao Soi Dao, Trang).

Turdinulus humei Hartert, Nov. Zool., vol. 9, p. 564, 1902 (Gunong Tahan, 1,500 feet, Pahang).

One male, Kao Soi Dao, Trang, November 30, 1933.

Dr. W. L. Abbott collected two males and one immature female in the hills of Trang, February 3–20, 1897; and one male and one female, Kao Soi Dao, 1000 feet, Trang, February 11, 1899. He gives the soft parts as: Iris dark brown; bill dark horn above, leaden beneath; feet fleshy brown.

Two females from Selangor in the United States National Museum apparently do not differ from Trang specimens.

One of Dr. Abbott's specimens is an immature female and was collected in the Trang Hills, February 16, 1897. It is of about adult size and resembles the adult, except the upperparts are a redder brown without streaks or flammulations, the wing spots ochraceous-buffy; below there are no streaks, the cheeks are without any stippling, and the superciliary is only distinct beyond the eye and is tawny.

The form evidently extends from the southern Malay States north through Peninsular Siam to the mountains of Nakon Sritamarat, where Robinson and Kloss [30] report it fairly common.

NAPOTHERA EPILEPIDOTA BAKERI (Harington)

Turdinulus bakeri Harington, Bull. Brit. Orn. Club, vol. 33, p. 44, 1913 (South Shan States, Burma).

One male, Doi Nangka, November 13, 1930.

This is a darker, less rufescent bird above than *N. e. granti* with much darker flanks. It had been previously reported by Williamson [31] from Muang Wang; de Schauensee [32] from Doi Sutep and later by Deignan from the same mountain, where he says it occurs from 4,500 to 5,500 feet; [33] de Schauensee [34] on his third expedition secured four males and five females at Chiengmai and Chiengdao.

The form ranges from the South Shan States, Burma, into northern Siam.

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[30] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 294, 1924.

[31] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 18, 1918.

[32] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 532, 1930.

[33] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 137, 1931.

[34] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 190, 1934.

TURDINUS MACRODACTYLUS MACRODACTYLUS (Strickland)

Malacopteron macrodactylum STRICKLAND, Ann. Mag. Nat. Hist., vol. 13, p. 417, 1844 (Malacca).

Turdinus macrodactylus bakeri HACHISUKA, Bull. Brit. Orn. Club, vol. 47, p. 54, 1926 (Lamra, Trang).

Two males and three females, Sichol, Bandon, August 31, 1929, May 23–27, 1930; one male, Kao Chong, Trang, September 8, 1933.

Dr. W. L. Abbott collected two males and three females in Trang (Lay Song Hong, August 26–September 27, 1896, and Trang, January 25, 1897). He describes the soft parts as: Iris gray brown; bill black; lower mandible yellowish at base; feet fleshy brown.

The series from Trang apparently does not differ from Malacca specimens. The specimens from Bandon, however, appear to be larger than the Trang birds, the chest and breast a clearer gray, the upper parts lighter brown, and the closed wing less chestnut, more of an argus brown. Nevertheless, I believe the Trang series are all more or less immature; one male is almost adult, and a male from Sichol also apparently not fully adult approaches it very closely.

Robinson and Kloss[35] have compared a large series from the Federated Malay States with six from Trang and find that they do not differ essentially.

The form ranges from the southern Federated Malay States north in Peninsular Siam as far as Bandon on the east coast and Ghirbi on the west coast.

MALACORNIS MAGNA MAGNA (Eyton)

Malacopteron magnum EYTON, Proc. Zool. Soc. London, 1839, p. 103 (Malaya).

Dr. W. L. Abbott collected the following in the Malay Peninsula: One male, Lay Song Hong, Trang, Peninsular Siam, September 20, 1896; one female, the Dindings, Straits of Malacca, April 13, 1900; one male and one female, Tanjong Dungun, Trengganu, September 20, 1902; one male, Rumpin River, Pahang, May 23, 1902.

He gives the soft parts as: Iris red or brownish red; upper mandible black, lower leaden; feet bright lead blue.

Robinson and Kloss[36] report it from Tasan, Chumporn, Peninsular Siam, which is about the northern limit of its range in Siam.

The form ranges from the southern end of the Malay Peninsula north through Peninsular Siam to southern Tenasserim, Sumatra, and Borneo.

I have shown that *Malacornis* Gistel should replace *Malacopteron* Eyton (preoccupied).[37]

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[35] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 290, 1924.

[36] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 293, 1924.

[37] Auk, vol. 50, p. 364, 1933.

MALACORNIS MAGNIROSTRIS MAGNIROSTRIS (Moore)

Alcippe magnirostris Moore, Proc. Zool. Soc. London, 1854, p. 277, 1855 (Malacca).

One male, Patalung, July 8, 1929; three males and two females, Sichol, Bandon, August 29, 1929, and May 22–28, 1930; three males, Kao Luang, Nakon Sritamarat, July 16, 1928 and October 7, 1930; three males, Kao Soi Dao, Trang, September 1, December 22 and 26, 1933.

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula: Eight males and nine females in Trang (Prahmon, April 8, 9, 1896; Lay Song Hong, September 15–November 20, 1896; Trang, February 3–27, 1897; Kao Nok Ram, 2,000 feet, January 10, 1899; Kao Soi Dao, 1,000–2,000 feet, February 2–20, 1899); one male and one female, Singapore Island, May 17, 26, 1899; one male Tanjong Laboha, Trengganu, September 29, 1900; and one male, Rumpin River, Pahang, July 3, 1902. He describes the soft parts as: Iris brown, yellowish brown, red, brownish red, or dark red; upper mandible dark brown, dull black, or dark leaden; lower mandible pale horny blue or pale leaden; feet leaden, pale lavender, or bluish fleshy.

A female shot by Dr. Abbott at Kao Soi Dao, Trang, February 2, contained well-developed eggs.

In the above series a male from Kao Chong, Trang (no. 333941) September 1; two males from Kao Luang, Nakon Sritamarat, July 16 and October 7 (nos. 311091 and 333558); and one female, Sichol, Bandon, August 29 (no. 324351) are somewhat different from the remainder of the series. Above they do not differ from the other specimens appreciably, but below they lack the dusky streaks on the foreneck and chest. The principal difference, however, is in the color of the feet and bill. In the normal adult (in the skin) the bill is black above, slaty horn below, and the feet slaty. In the four specimens mentioned above, the bill is brown above, yellowish horn below, and the feet yellowish horn. I rather think these birds represent immature birds just before acquiring the adult plumage. In all four specimens the extreme tip of the tail is a lighter hazel and in two of the specimens two of the inner secondaries are hazel, standing out from the dresden brown of the other flight feathers.

A female shot by Dr. Abbott at Prahmon, Trang, April 9, had the iris olive and the lower mandible yellowish. It is a subadult specimen with the inner secondaries of the immature still retained. This accounts, it seem to me, for the great variation in the color of the soft parts as recorded by Dr. Abbott. A plumage approximating that of the adult is assumed before the adult color of the eye is attained.

The form extends from the southern tip of the Malay Peninsula north through Peninsular Siam to southern Tenasserim.

Robinson and Kloss[38] record specimens from Tung Pran, Takuatung, and Tasan, Chumporn. This is as far north as I have seen any records for Peninsular Siam.

MALACORNIS AFFINIS AFFINIS (Blyth)

Trichastoma affine Blyth, Journ. Asiat. Soc. Bengal, vol. 11, 1842, p. 795 (Singapore).

Four males and one female, and one unsexed, Bangnara, Patani, July 14–19, 1926.

Dr. W. L. Abbott collected a male on the Rumpin River, Pahang, May 30, 1902 He gives the soft parts as bill leaden, brown above; feet leaden.

The species seems to be confined to the southern end of the Malay Peninsula and so far has been taken in Peninsular Siam only in the Province of Patani. The species has been recorded from Sumatra and Borneo, but specimens I have examined from these islands seem to be somewhat smaller and with more of a tawny wash above.

The present species differs from *magnirostris* in having the pileum blackish.

MALACORNIS CINEREA CINEREA (Eyton)

Malacopteron cinereus Eyton, Proc. Zool. Soc. London, 1839, p. 103 (Malaya).

One male, Kao Luang, Nakon Sritamarat, July 19, 1928; one male, Sichol, Bandon, August 28, 1929; two males, Kao Soi Dao, Trang, December 24, 1933, January 8, 1934.

Dr. W. L. Abbott collected the following: Seven males and six females in Trang (Prahmon, April 8, 1896; Lay Song Hong, August 19–November 9, 1896; Trang, January 25–February 7, 1897; Kao Nok Ram, 1,000 feet, January 4, 1899; Kao Soi Dao, 1,000 feet, February 8, 1899); two females, the Dindings, Straits of Malacca, April 13, 1900; one male, Rumpin River, Pahang, June 22, 1902; one male, Dungun River, Trengganu, September 22, 1900. He gives the soft parts as: Iris brown, grayish brown, or dark red; upper mandible brownish black, lower mandible leaden, fleshy at base; feet pale fleshy purple; eyelids pale yellowish green.

This is a smaller species than *M. magna* but much like it in color above, but without the dusky streaks on the throat and chest. Both species have rusty foreheads and black napes.

The form ranges from the southern end of the Malay Peninsula north through Peninsular Siam as far as Bandon.

Williamson[39] records it from Patani; Robinson and Kloss[40] from Kao Ram, 1,200 feet, and Kao Luang, 2,500 feet, Nakon Sritamarat.

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[38] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 293, 1924.

[39] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 17, 1918.

[40] Journ. Federated Malay States Mus., vol. 11, p. 62, 1923.

MALACORNIS RUFIFRONS INDOCHINENSIS (Robinson and Kloss)

Horizillas rufifrons indochinensis Robinson and Kloss, Journ. Federated Malay States Mus., vol. 10, p. 205, 1921 (Trangbom, Cochinchina).

One male, Nong Mong, Muang Krabin, August 27, 1925; one female, Sakeo, near Krabin, May 4, 1928; one male, Nong Khor, near Sriracha, September 24, 1925; two males, one female, and one unsexed, Pak Chong, eastern Siam, May 8 and 14, 1925; two males and one female, Lam Klong Lang, Pak Chong, June 10–11, 1925; one male, Tha Chang, near Pak Chong, May 18, 1927; one female, Ban Tarn Dam, southeastern Siam, no date; one male and one female, Kao Bantad, Krat, December 21, 1929; two males and one female, Aranya, July 16, 1930; two males and two females, Hupbon, November 5, 1931; four males and three females, Hin Lap, eastern Siam, December 9–11, 1931.

This series is from eastern and southeastern Siam. The only specimen of *M. r. rufifrons* from Java examined is larger; the tail and tail coverts are a brighter and more rufous brown; the pileum is more tawny; and there are some other differences. The considerable series from Siam seems to fit the description of the Cambodian form, though I have no specimens for comparison.

The form ranges all over French Indo-China, with the exception of Tonkin and northern Laos, and westward into southeastern and eastern Siam.

Robinson [41] recorded it from Klong Menao; and Kloss [42] from Lat Bua Kao and Satahip, near Cape Liant, the latter under the name *Setaria lepidocephala*.

ERYTHROCICHLA BICOLOR BICOLOR (Lesson)

Brachypteryx bicolor Lesson, Rev. Zool., p. 138, 1839 (Sumatra).

Dr. W. L. Abbott took a male and female, Lay Song Hong, Trang, August 21 and November 11, 1896. He describes the soft parts as: Iris pale brown; upper mandible dark brown, lower mandible fleshy, pale leaden at tip; feet pale fleshy brown.

Robinson and Kloss [43] report it from Tasan, Chumporn, Peninsular Siam; they had previously [44] reported it as widely distributed and commonest in the central part of the Peninsula.

The form extends from the southern end of the Peninsula north to southern Tenasserim, Sumatra, and Banka.

While the only specimen examined from Sumatra, a female differs somewhat from the female from Trang, the differences may be attributed to individual variations. A male from Banka Island is somewhat darker above than a male from Trang and a male from Perak and possibly may not be the same.

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[41] Ibis, 1915, p. 748.

[42] Ibis, 1918, p. 203.

[43] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 290, 1924.

[44] Ibis, 1911, p. 60.

Bornean birds have been separated by Hartert as *E. b. whiteheadi*,[45] and the only specimen examined from there bears out the diagnosis; a male from Pulo Laut, southeastern Borneo, is brighter and more rufescent above than the two males from the Malay Peninsula. The specimen may represent an insular form or the differences may be due to individual variation.

OPHRYDORNIS ALBOGULARIS ALBOGULARIS (Blyth)

Setaria albogularis Blyth, Journ. Asiat. Soc. Bengal, vol. 13, p. 385, 1844 (Singapore).

Dr. W. L. Abbott took a single male of this rare species on the Rumpkin River, Pahang, June 5, 1902. He gives the soft parts as: Iris deep red; upper mandible black, lower mandible leaden; feet dark leaden.

Dr. Abbott states that it frequents thick brush in heavy forest, keeping close to the ground.

I have seen no records from Siamese territory, but it will probably be found to extend much farther north than it is known to do at present. It occurs also in Sumatra.

This species may be briefly described as: Pileum, lores, and cheeks dark neutral gray; a narrow white superciliary from the nostril to posterior border of the eye; throat white; a neutral gray band across the jugulum; middle of the breast and belly white; sides, flanks, and under tail coverts cinnamon-buff; back and closed wing cinnamon-brown; tail fuscous, the outer webs of the feathers russet. Wing, 71; tail, 49; culmen, 13.5 mm.

The rictal bristles are long and stiff, and the white feathers over the lores, forming part of the superciliary, are erect and stiff.

A related form, *O. a. moultoni* Robinson and Kloss, is found in Borneo.

AETHOSTOMA ROSTRATUM ROSTRATUM (Blyth)

Trichastoma rostratum Blyth, Journ. Asiat. Soc. Bengal, vol. 11, p. 795, 1842 (Singapore).

One male and one female, Bangnara, Peninsular Siam, July 17, 1926.

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula: One male, Trang, January 4, 1897; two males and one female, Singapore Island, May 20–26, 1899; one male, Rumpin River, Pahang, June 3, 1902. He gives the soft parts as: Iris pale brown; upper mandible dark horn brown, lower leaden; feet brownish fleshy.

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[45] Bull. Brit. Orn. Club, vol. 36, p. 36, 1915.

The form extends from Singapore north to southern Tenasserim, but I have examined no specimens north of Trang; the latter do not differ appreciably from the Singapore specimens.

Robinson and Kloss [46] report two males from Tasan, Chumporn, Peninsular Siam, which they say is the first record from Siam. In Sumatra and Borneo closely related forms occur.

MALACOCINCLA ABBOTTI Blyth

Malacocincla abbotti Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 601, 1845 (Ramree Island, Arakan).

One male, Bangnara, Patani, July 14, 1926; two females, Tha Lo, Bandon, September 13, 20, 1931; two males, Koh Pangan, Bandon, August 1, 1931; one male, Koh Lak, June 24, 1933; one male, Pran, April 2, 1931; one male, Muang Kanburi, April 16, 1928; one male and one female, Bangkok, February 7 and March 8, 1924; five males and four females, Pak Chong, eastern Siam, February 5, May 14–15, and November 15, 1925, November 16–December 9, 1929; two males and three females, Lam Klong Lang, Pak Chong, June 7–14, 1925; two males, Lamton Lang, June 1, 1934; one male and one female, Lat Bua Kao, eastern Siam, August 6, 1929; one male and one female, Sakeo, near Krabin, May 4–5, 1928; one female, Nong Mong, August 24, 1925; one male, Sikeu, near Korat, March 1, 1926; two males and one female, Hupbon, November 5, 14, 1931; one male and one female, Nong Khor, near Sriracha, September 25, 1925; one female, Ban Tarn Dam, Sriracha, March 4, 1930; one female, Klong Yai, Sriracha, July 24, 1932; three males and one female, Kao Seming, Krat, December 31, 1929–January 1, 1930; one male, Kao Bantad, Krat, December 22, 1929; two males, Kao Lem, Chantabun, June 7, 1926 and December 28, 1930; three males and one female, Koh Kut, May 20 and 23, 1929; four males and one unsexed, Kao Sabap, October 25–November 7, 1933; two males and one female, Knong Phra, April 9–10, 1929–January 2, 1931; one male, Ban Kam Pran, Pasak River, October 18, 1932.

Dr. Smith took two sets of three eggs each at Pak Chong, May 14, 1925.

Dr. W. L. Abbott collected the following: Four males and one female, Trang, April 2, 1896, February 8–10, March 8, 1897, and February 23, 1899; one male and two females, Pulo Langkawi, December 6, 1899 and November 5, 1903; one male, Pulo Terutau, November 10, 1903; one female, Tanjong Laboha, Trengganu, September 28, 1900; four males and two females, Tenasserim (Tanjong Badak, January 7–12; Victoria Island, January 5; Bok Pyin, February 11; Chaduquat Point, Pakchan River, December 19; all in 1900); five males and five females, Mergui Archipelago (Sullivan Island; February 2 and January 4; St. Matthew Island, January 14, 16; St. Luke Island, January 19; Loughborough Island, January 23; Ross Island, March 5; Helfer Island, March 6; Bentinck Island, March 10; all except one in 1900, this exception being a female collected with a nest and two eggs on Sullivan Island, January 4, 1904). Beside the nest just mentioned, he collected another nest and two eggs in Trang, March 8, 1897.

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[46] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 292, 1924.

He describes the soft parts as: Iris pale brown, olive-brown, or yellowish brown; bill dark horn brown, blackish or dark leaden above, leaden, leaden blue or bluish white below, paler near tip; feet pale brownish fleshy or pale fleshy.

The series from Tenasserim and the Mergui Archipelago seem to have a little more russet tinge to the upperparts and average slightly larger than the series from the Malay Peninsula from Bandon south. I have seen few birds from the Federated Malay States, however.

The differences are slight and hardly worth recognizing by name. The eastern and southeastern Siamese series agree with the series from Peninsular Siam in size and color rather than with Tenasserim birds. The single male from Koh Lak and the two males from Lamton Lang are much worn and considerably lighter than the remainder of the series.

The above large series represents the Siamese range of this bird quite satisfactorily, except there are no specimens from northern Siam. The species has quite an extensive range, extending from Nepal, Sikkim, Assam, and Burma to the Malay Peninsula, Siam, and Cambodia.

In the Malay States a form of *Malacocincla sepiaria* is found. Several races described as forms of *M. abbotti* are really forms of *M. sepiaria*. It is very doubtful if any form of *M. abbotti* occurs south of the Malay Peninsula.

THRINGORHINA STRIOLATA GUTTATA (Blyth)

Turdinus guttatus (Tickell MS.) Blyth, Journ. Asiat. Soc. Bengal, vol. 28, p. 414, 1859 (Muleyit).

One male, Kao Luang, Nakon Sritamarat, 4,000 feet, July 20, 1928.

Dr. W. L. Abbott took six males, four females, and one unsexed in Trang, as follows: hills at 1,000 feet, March 2 and 3, 1897; Kao Nok Ram, 2,000–3,000 feet, January 8–15, 1899; and Kao Soi Dao, 1,000–2,000 feet, February 5–18, 1899. He gives the soft parts as: Iris dark brown or dark red; orbital skin dark blue; bill dark horny, leaden blue, or black above; leaden beneath; feet fleshy brown.

Chasen and Kloss record it from Hue Nya Pla, in the Raheng District, western Siam,[47] and one of the specimens, a male, was acquired by the United States National Museum.

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[47] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 177, 1928.

The form ranges from the Federated Malay States north through the Malay Peninsula to the mountains of Peninsular Burma and western Siam.

The Raheng male mentioned above is less rufous and lighter above and the bill seems to be longer when compared with a series of males from Trang. Six males from Trang measure: Wing, 64, 72, 67, 70, 72, 68.5; culmen, 18, 19, 18.5, 19, 18, 18.5 mm. The Raheng male: Wing, 70; culmen, 20 mm.

STACHYRIS LEUCOTIS LEUCOTIS (Strickland)

Timalia leucotis Strickland, Jardine's Contributions to ornithology, p. 63–10, pl. 12, 1848 (Malacca).

Two males and one female, Kao Soi Dao, Trang, December 28, 1933, January 1, 1934.

Dr. Abbott took two males and three females at Kao Soi Dao, 1,000 feet, Trang, Peninsular Siam, February 2 and 4, 1899. He gives the soft parts as: Iris dark or blackish brown; upper mandible black, lower mandible leaden; feet fleshy brown with an olive tinge.

The species ranges from the southern end of the Malay Peninsula as far north as Trang; a closely related form, *S. l. goodsoni* Hartert, occurs in Borneo.

Owing to the thick heavy bill and heavy feet of this bird, it seems it had better be placed in *Thringorhina* than in *Stachyris*, but it is left here for the present.

STACHYRIS NIGRICEPS COLTARTI Harington

Stachyris nigriceps coltarti Harington, Bull. Brit. Orn. Club, vol. 33, p. 61, 1913 (Margherita, Assam).

One male and one female, Doi Nangka, November 3 and 16, 1930.

De Schauensee [48] took a female on Doi Sutep, 4,500 feet, and both Deignan [49] and Chasen and Kloss [50] have since reported it from there. De Schauensee [51] on his third expedition took two males in the southern Shan States and a female at Chiengmai, which he assigns to *S. n. davisoni* though he thinks they may be intermediate. My two specimens from Doi Nangka are certainly not *davisoni* or *dipora*, and if not *coltarti* they must be close to it. I have not had a specimen of the latter to examine, however.

The form is tawnier than *dipora*, and the supra-auricular black streak is broader and more pronounced.

This race ranges from Assam south of the Brahmaputra through western Burma to the mountains of northern Siam.

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[48] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 532, 1930.

[49] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, no. 3, p. 137, 1931.

[50] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 244, 1932.

[51] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 191, 1934.

The two specimens from Doi Nangka (female first) measure: Wing, 59–61; tail, 51–54; culmen, 16.5–17 mm. Seven males and two females from Trang (*dipora*): Wing, 56–62 (58.9); tail, 41–52 (46.5); culmen, 14.5–16.5 (15.3) mm. Four males and one female from Selangor and Linga Island (*davisoni*): Wing, 55–62 (59.2); tail, 44.5–49 (47.4); culmen, 15–16.5 (15.7) mm.

STACHYRIS NIGRICEPS DIPORA Oberholser

Stachyris nigriceps dipora OBERHOLSER, Smithsonian Misc. Coll., vol. 74, no. 2, p. 7, 1922 (Kao Soi Dao, Trang).

Three males, Kao Soi Dao, Trang, December 22–30, 1933.

Dr. W. L. Abbott collected four males and two females in Trang (Kao Nok Ram, 2,000–3,000 feet, January 9–16, 1899; Kao Soi Dao, 2,000 feet, February 2, 1899; and hills of Trang, 1,000 feet, February 18, 1897). He gives the soft parts as: Iris pale brown, brownish yellow, or dull yellow; upper mandible dark horny or black, lower mandible leaden blue at base; feet dark leaden or greenish leaden.

The above series is paler above and below than a series of four males and one female of *davisoni* from Selangor and Linga Island, Rhio Archipelago. While the differences are slight, they seem to be fairly constant in the specimens examined.

S. n. davisoni is likely confined to the Malay States, and the present form ranges from Trang northward to southern Tenasserim. Robinson and Kloss [52] record it from Tapli and Tasan, which is as far north as there are any records from Peninsular Siam.

STACHYRIS NIGRICOLLIS ERYTHRONOTUS (Blyth)

Timalia erythronotus BLYTH, Journ. Asiat. Soc. Bengal, vol. 11, p. 793, 1842 (Singapore Island).

One female, Bukit, Patani, January 24, 1931.

Dr. W. L. Abbott collected the following: One male, Prahmon, Trang, April 8, 1896; one male, Trang, January 3, 1897; one male, Rumpin River, Pahang, July 12, 1902; one female, Endau River, east coast of Johore, July 10, 1901; one unsexed, Province of Wellesley, Straits Settlements (purchased, no date). He gives the soft parts as: Iris red; bill black, base of lower mandible leaden blue; feet black.

The above series averages darker above than four males from Borneo and one male from eastern Sumatra; below there is little or no difference. It is not a well-marked race.

There seems to be little difference in size, except that the mainland form seems to have a somewhat larger bill. Two males, two females, and one unsexed from the Malay Peninsula measure: Wing, 66–74 (69); tail, 46–54 (49.6); culmen, 18–19 (18.4) mm. Four males from

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[52] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 196, 1924.

Borneo and one male from Sumatra: wing, 65–74 (69.9); tail, 47–54 (50.8); culmen, 17–18 (17.6) mm.

The form ranges from the Malay States north to Trang and Nakon Sritamarat. Williamson[53] records it from Bangnara, Patani; Robinson and Kloss[54] say it is rare in Trang; de Schauensee[55] collected a pair in Nakon Siritamarat.

STACHYRIS POLIOCEPHALA DILUTA Robinson and Kloss

Stachyris poliocephala diluta Robinson and Kloss, Ibis, 1918, p. 587 (Taiping, Peark).

Dr. W. L. Abbott took a female at Lay Song Hong, Trang, August 31, 1896, and another female with a nest and three eggs in Trang, March 8, 1897. He gives the soft parts as: Iris straw yellow; upper mandible dull black, lower mandible leaden; feet greenish leaden.

The form occurs from the southern end of the Malay Peninsula north to Trang and Nakon Sritamarat. Robinson and Kloss[56] report it rare in Trang. De Schauensee[57] secured a male in Nakon Sritamarat.

Three specimens from Borneo are somewhat darker than three from the Malay Peninsula. No specimens from Sumatra have been examined.

STACHYRIS MACULATA PECTORALIS (Blyth)

Timalia pectoralis Blyth, Journ. Asiat. Soc. Bengal, vol. 11, p. 793, 1842 (Malacca).

Dr. W. L. Abbott took the following in the Malay Peninsula: Three females, Lay Song Hong, Trang, December 30, 1896; four males, Endau River, eastern coast of Johore, June 22–28, 1901; two males, Rumpin River, Pahang, May 27 and June 29, 1902. He gives the soft parts as: Iris brownish yellow or straw yellow; orbital skin and naked skin on neck blue; upper mandible black, lower mandible leaden at the base; feet leaden.

Beside the differences pointed out by Robinson and Kloss,[58] the present series seems to be on an average less heavily spotted below than either Sumatran or Bornean specimens.

There seems to be little or no difference in size. Three males and two females from Sumatra and one male and two females from Borneo measure: Wing, 76–85 (81.2); tail, 64–70.5 (66.7); culmen, 19–20.5 (19.9) mm. Six males and four females from the Malay Peninsula: Wing, 78–85 (80.9); tail, 62–69 (65.9); culmen, 18.5–20.5 (19.7) mm.

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[53] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 17, 1918.

[54] Ibis, 1911, p. 62.

[55] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 192, 1934.

[56] Ibis, 1911, p. 62.

[57] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 192, 1934.

[58] Ibis, 1918, p. 587.

The form ranges from the southern end of the Malay Peninsula north to Trang in Peninsular Siam.

STACHYRIDOPSIS CHRYSAEA CHRYSOPS (Richmond)

Stachyris chrysops Richmond, Proc. Biol. Soc. Washington, vol. 15, p. 157, 1902 (Kao Nom Plu, Trang, Peninsular Siam).

Besides the type taken by Dr. W. L. Abbott on Kao Nom Plu, 3,000 feet, Trang, February 22, 1897, the United States National Museum contains only two females, from Semangko Pass, Selangor-Pahang Boundary.

This form is duller on the back, dark citrine, rather than citrine of *assimilis;* it is also much duller yellow below and on the pileum.

The race ranges from the southern Malay Peninsula north to southern Tenasserim and probably farther north.

STACHYRIDOPSIS CHRYSAEA ASSIMILIS (Walden)

Stachyris assimilis Walden, *in* Blyth's Catalogue of mammals and birds of Burma, p. 116, 1875 (Karennee, Burma).

Three males and one female, Doi Nangka, November 16, 1930, and April 23–27, 1931; five males, Pang Meton (Doi Nangka), April 29–May 6, 1931; two males, Doi Hua Mot, August 30, 1934.

This form is brighter, the back more citrine rather than dark-citrine of *chrysaea*; the lowerparts and pileum are a brighter, deeper yellow.

Deignan [59] records it as uncommon on Doi Sutep from 5,000 to 5,500 feet, and it probably occurs on other mountains of northern Siam. De Schauensee [60] took it at Chiengmai and Chiengdao.

The form ranges from the southern Shan States, Burma, to northern Siam.

CYANODERMA ERYTHROPTERA ERYTHROPTERA (Blyth)

Timalia erythroptera Blyth, Journ. Asiat. Soc. Bengal, vol. 11, p. 794, 1842 (no locality given, but probably Singapore).

Three males and two females, Bangnara, Patani, July 14–18, 1926; one male, Yala, Patani, January 31, 1931; one male, Patalung, July 7, 1929; one male and one female, Tha Lo, Bandon, September 23–28, 1931; three males and three females, Sichol, Bandon, August 28–31, 1929, May 19–27, 1930; one male, Kao Soi Dao, Trang, January 15, 1934.

Dr. W. L. Abbott has sent the following specimens from the Malay Peninsula: one male and two females, Lay Song Hong, Trang, September 3–20, and December 14, 1896; one male, Prahmon, Trang, March 24, 1896; two males and one female, Trang (no other locality), February 9, 1897, December 28, 1898, and January 29, 1899; one female, Singapore Island, May 20, 1899; one male, the Dindings, Straits of

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[59] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 137, 1931.

[60] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 191, 1934.

Malacca, April 14, 1900; one female, Tanjong Dungun, Trengganu, September 21, 1900; one male, Dungun River, Trengganu, September 21, 1900; one male, Tanjong Laboha, Trengganu, September 29, 1900; one male, Endau River, eastern coast of Johore, July 18, 1901. He gives the soft parts as: Iris dark red or brownish red; bill black above, dark blue below at the base; naked skin about the eyes and the angles of the jaws dull blue; feet pale olive fleshy or pale greenish brown.

Both the series collected by Dr. Smith and that of Dr. Abbott vary in the depth of color above and below individually. The throat, face, and forehead vary from a deep neutral gray to dark dull gray; the back from russet to cinnamon-brown. The light-colored birds are either females or immature, though in fully adult specimens there is little or no difference in color between the sexes. I think the variation due to age, though I have not seen specimens from the northern part of its range.

The form ranges from the southern end of the Malay Peninsula north through Peninsular Siam to southern Tenasserim. Closely related forms have been described from Sumatra, Banka, Banjak, and Batu Islands, and Borneo. Robinson and Kloss [61] record specimens from Tung Pran, Mamoh, Tapli, and Tasan, which are apparently near the northern limit of its range in Peninsular Siam.

MIXORNIS GULARIS GULARIS (Horsfield)

Timalia gularis Horsfield, Zoological researches in Java, no. 3, pl. and text, 1822 (founded upon *Motacilla gularis* Raffles MS.; Sumatra).

Prinia pileata Blyth, Journ. Asiat. Soc. Bengal, vol. 11, p. 204, 1842 (Malay Peninsula).

Dr. W. L. Abbott took two males and two females on Singapore Island, May 12–31, 1899; one male, Tanjong Laboha, Trengganu, September 29, 1900; one male, Pulo Adang, Butang Island, West Malay Peninsula, December 17, 1899. He gives the soft parts as: Iris dull brown or yellowish brown; naked skin about the eye dull blue; bill black above, leaden blue beneath; feet olive or greenish.

The series from Trang and Yala, Patani, are intermediate between *gularis* and *connectens*, being somewhat darker on the back than the latter and a little heavier streaked on the throat, but on the whole nearer *connectens*.

Robinson and Kloss [62] say that this Malayan form extends northward to Patani; this must be just along the southern border. Dr. Abbott took a specimen on Pulo Adang, an island to the west of Langkawi; otherwise the form seems to be confined to the Malay States.

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[61] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 298, 1924.

[62] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 300, 1924.

M. g. gularis is darker above than *connectens*, with a more heavily streaked throat.

MIXORNIS GULARIS CONNECTENS Kloss

Mixornis rubricapilla connectens Kloss, Ibis, 1918, p. 207 (Malay Peninsula, about lat. 10° N.).

Mixornis gularis chersonesophila Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 3, 1922 (Trang, Lower Siam).

Mixornis gularis archipelagica Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 4, 1922 (Domel Island, Mergui Archipelago).

Mixornis gularis inveterata Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 5, 1922 (Koh Kut, southeastern Siam).

One male and two females, Yala, Patani, January 30, 1931; two males, Kao Luang, Nakon Sritamarat, October 4, 1930; one male, Singora, June 29, 1929; two males, Koh Samui, August 7, 1931; one male and one female, Pran, southwestern Siam, April 1, 1931 and May 28, 1928; two males, Nong Yang, November 16, 1931; two females, Hupbon, November 5, 1931; one male, Kao Seming, Krat, October 16, 1928; one male, Lem Sing, Chantabun, March 16, 1930; one male, Koh Kut, May 22, 1929; one male, one female, and one unsexed, Koh Chang, April 1, 1924, and January 16, 1926; one male, Kao Sabap, October 27, 1933. Dr. Smith collected a set of three eggs at Pran, May 28, 1928, with the parent.

The two specimens from Pran are not typical but incline to *sulphurea*.

Dr. W. L. Abbott took nine males and three females in Trang, Peninsular Siam, as follows: Prahmon, February 21–22, 1896; Tyching, April 29 and May 27, 1896; Telibon Island, February 25, 28, 1896; near Chong, January 20, 1897; and "Trang", January 4–March 9, 1897. He also took the following sets of eggs with nests: Three eggs, Tyching, April 29, 1896; three eggs, Trang, February 14, 1897; three eggs, Trang, March 9, 1897. He gives the soft parts as: Iris dark brown, brownish yellow, greenish or yellow; upper mandible blackish brown or black; lower mandible yellowish olive or dull plumbeous; feet fleshy brown, olive or olive-plumbeous.

On first sight the Trang series seems to be quite different from specimens to the north and south of it, but I find there is a seasonable change of plumage. The fall and early-winter specimens are a deep yellow, which fades badly during the breeding season. The Trang series is in breeding plumage and is much lighter than fall birds to the north and south of it. There are a few breeding birds in Dr. Smith's series and they agree with the Trang specimens. The Koh Kut and Koh Chang birds in Dr. Smith's series do not differ essentially from the Trang series; they are a little more worn and a little more faded. The type of *inveterata* is in fresh winter plumage and is rather yellow below, but it can be matched by specimens from Peninsular Siam.

Dr. W. L. Abbott collected, in 1900, two males and five females in the Mergui Archipelago (St. Matthew Island, January 14; Domel Island, February 27; Bentinck Island, March 9–10; High Island, December 31) and a male at Tanjong Badak, Tenasserim, January 7, 1900. This is the series upon which the name *M. g. archipelagica* cited above was founded. I am inclined to lump these with *connectens* also. They can be matched in plumage by birds from southeastern Siam; the bills average a little larger, but there is not sufficient difference to warrant a new race.

Three males from Mergui and Tenasserim measure: Wing, 55–62.5 (59.2); tail, 47–54 (51.3); culmen, 14.5–15 (14.8) mm. Eight males from Trang: Wing, 58–62 (60.2); tail, 49–57 (52.5); culmen, 14–15 (14.5) mm. Ten males from northern Peninsular and southeastern Siam: Wing, 55–61 (57.6); tail, 48–54.5 (50.7); culmen, 13–14.5 (14) mm.

The form ranges from Patani in Peninsular Siam north to southern Tenasserim, the Mergui Archipelago, extreme southern Siam to southeastern Siam, Cambodia, Cochinchina, and southern Annam.

Herbert[63] found it breeding around Bangkok in May and June and has described the nest and eggs.

MIXORNIS GULARIS SULPHUREA (Rippon)

Stachyridopsis sulphurea RIPPON, Bull. Brit. Orn. Club, vol. 11, p. 11, 1900 (Nameket, southern Shan States).

Mixornis sumatrana minor GYLDENSTOLPE, Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 60, 1916 (Pak Koh, northern Siam).

One male, Muang Kanburi, western Siam, April 15, 1928; one not sexed, Doi Angka, 4,000 feet, December 3, 1928; three females, Khun Tan, October 23 and 27, 1929; five males and three females, Ban Nam Kien, Nan, April 18–20, 1930; two males, Aranya, July 17, 1930; two males, Lam Klong Lang, Pak Chong, June 5, 1925; one female, Pak Chong, eastern Siam, November 19, 1929; one female, Nong Mong, Muang Krabin, August 8, 1925; one female, Sikeu, near Korat, March 4, 1926; two males and one female, Hin Lap, eastern Siam, December 6, 1931, October 1, 1932; one immature male, Gengkoi, October 16, 1932.

This series covers the range of this form fairly well as far as Siam is concerned. De Schauensee[64] found it at Chiengmai, Chiengrai, and Chiengsen, and later at Chiengdao. Deignan[65] says it is common on the plain at Chiengmai and ascends Doi Sutep to 3,500 feet.

The range of the form is from the southern Shan States, Burma, and southern Yunnan south into western, northern, and eastern Siam and east to western Laos. My statement for the last locality is founded upon a single specimen collected by Dr. Smith at Ban Keng Sadok, March 1, 1929; since this was first written de Schauensee also reports it from Laos.

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[63] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 92, 1923.

[64] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 533, 1930; vol. 86, p. 192, 1934.

[65] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 137, 1931.

This form is more lightly colored on the head and back, and the dark shaft streaks of the throat and chest are very fine and almost obsolete.

ALCIPPE NIPALENSIS FRATERCULA Rippon

Alcippe fratercula Rippon, Bull. Brit. Orn. Club, vol. 11, p. 11, 1900 (hills of southern Shan States).

One male and one female, Doi Angka, 5,000–8,000 feet, December 4 and 5, 1928; four males and two females, Doi Nangka, November 3–17, 1930, and April 25–26, 1931; one unsexed, Pang Meton (Doi Nangka), May 2, 1931; nine males and one female, Doi Hua Mot, August 20–September 6, 1934; one female, Khun Tan Mountains, 3,000 feet, May 10, 1933.

The series from Doi Hua Mot are molting and the gray of the pileum is much faded.

De Schauensee [66] took a large series at Chiengmai and Chiengdao and says that it is an excessively common bird in the mountains of northern Siam above 4,000 feet; it has been taken on Doi Sutep by several collectors.

The form ranges from the Bhamo Hills and Shan States, Burma, to Tenasserim and northern Siam.

This form resembles the Chinese races (*yunnanensis*, *hueti*, and *davidi*) rather than the nominate form, which is whiter below. *A. n. fratercula* is quite distinct from *A. n. peracensis*. The lower parts in the former are cinnamon-buff instead of being almost white with only a slight buffy wash on chest and flanks.

ALCIPPE NIPALENSIS PERACENSIS Sharpe

Alcippe peracensis Sharpe, Proc. Zool. Soc. London, 1887, p. 439 (Larut Mountains, Perak).

One immature male, Ban Hui Ta, Kao Luang, Nakon Sritamarat, July 12, 1928.

This specimen differs from the adult from the Malay States in having the pileum washed with brown; in lacking the black stripe on each side of the head; and in having the chest and flanks washed with grayish. It is probably an immature of this form, as the chest and belly are white. Possibly it represents an undescribed form.

The form has not been recorded from Siam before.

The race ranges from the mountains of the Malay States northward to Nakon Sritamarat. Very probably it will be found on other mountains of Peninsular Siam when they have been better explored.

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[66] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 103, 1934.

ALCIPPE NIPALENSIS EREMITA Riley

Alcippe nipalensis eremita Riley, Proc. Biol. Soc. Washington, vol. 49, p. 25, 1936 (Kao Seming, Krat, southeastern Siam).

One male and one female, Kao Seming, Krat, October 16, 1928; one male and two females, Kao Sabap, 2,000 feet, November 16, 17, 1933.

This series is similar to *A. n. peracensis* of the Malay Peninsula but is lighter brown on the back and tail; the pileum a lighter gray; the black line on each side of the crown and nape broader and a deeper black; the under tail coverts and thighs much lighter; the feet (in the skin) are deep grayish olive instead of tawny and the bill averages larger.

Two males and two females of *A. n. peracensis* measure: Wing, 64–65.5 (64.7); tail, 64–66.5 (65); culmen, 11–12 (11.7) mm. Two males and three females of *A. n. eremita:* Wing, 65–68.5 (66.7); tail, 59–65 (61.9); culmen, 12–13 (12.5) mm. A pair of paratypes of *A. n. annamensis:* Wing, 58–63; tail, 61–64; culmen, 10.5–11 mm.

The pair of *A. n. annamensis* differ from *A. n. eremita* in being paler on the back and tail, the chest tinged with grayish, whereas in the latter the throat is whitish and the chest light buff; the bill in *annamensis* is smaller. It seems to be a good form and is probably confined to the mountains of southern Annam.

A. n. eremita is probably confined to the mountains of southeastern Siam and Cambodia.

Delacour and Jabouille[67] record *A. n. peracensis* from southern Laos. The record probably belongs to *A. n. eremita.*

Birds of this form group are mountain-inhabiting, and there is a long stretch of country between the range of *A. n. peracensis* and *A. n. eremita* where the species does not occur.

ALCIPPE POIOICEPHALA HARINGTONIAE Hartert

Alcippe haringtoniae Hartert, Bull. Brit. Orn. Club, vol. 25, p. 10, 1909 (Bhamo, Upper Burma).

Four males and one female, Khun Tan, October 28, 1929, September 6 and 9, 1930, and March 4, 1932.

De Schauensee[68] took two males at Chieng Sen and says that it replaces *A. nipalensis fratercula* in the lowland forests; on his third expedition[69] he took a small series at Chiengdao and Khun Tan and changed his former identification from *haringtoniae* to *magnirostris,* but without comparison. I likewise have no specimens for comparison, but the specimens before me do not agree with S. Baker's description of *magnirostris.*[70] The coronal stripes are blackish, and the chin and throat are *not whitish* but the same color as the rest of the underparts, ochraceous-buff. Gyldenstolpe[71] records it as *A. p. magnirostris* from Kao Plyng and Doi Par Sakeng.

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[67] Oiseaux l'Indochine Française, vol. 3, p. 298, 1931.

[68] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 533, 1930

[69] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 193, 1934.

[70] The fauna of British India. Birds, ed. 2, vol. 1, p. 280, 1922.

If correctly determined, then *A. p. haringtoniae* would range from northeastern Upper Burma south into northern Siam.

ALCIPPE POIOICEPHALA DAVISONI Harington

Alcippe phaeocephala davisoni Harington, Journ. Bombay Nat. Hist. Soc., vol. 23, p. 453, 1915 (Tavoy; Mergui and the south).

One male and one female, Kao Luang, 3,000 feet, Nakon Sritamarat, July 14, 1928; one female, Pran, April 1, 1931; two males, Kao Soi Dao, Trang, September 9 and December 26, 1933.

Dr. W. L. Abbott collected the following: Seven males and five females in Trang (Kao Soi Dao, 2,500 feet, February 10, 12, 1897; Kao Nom Plu, 2,000–3,000 feet, February 20–24, 1897; slopes of Kao Song, 2,000 feet, March 1, 1897; Kao Nok Ram, 2,000–3,000 feet, January 10–12, 1899); two males, Tenasserim (Victoria Point, January 3, 1900; Telok Krang, February 17, 1904); three males and one female, Mergui Archipelago (St. Matthews Island, January 14, 15, 1900; Sullivan Island, February 4, 1900). He gives the soft parts as: Iris dark brownish gray; bill dark horny brown above, pale leaden beneath; feet pale brownish fleshy.

A specimen shot on Kao Soi Dao, February 12, contained nearly mature eggs.

In this form the nuchal dark stripes are absent or practically so.

This form extends from Trang, Peninsular Siam, north to southwestern Siam and southern Tenasserim; perhaps somewhat farther north and south.

ALCIPPE CINEREA CINEREA Blyth

Alcippe cinerea Blyth, Journ. Asiat. Soc. Bengal, vol. 13, p. 384, 1844 (Singapore).

Four males and two females, Kao Soi Dao, Trang, December 28–30, 1933.

Dr. W. L. Abbott took five males and two females in Trang (Lay Song Hong, September 10, 1896; Kao Nom Plu, 1,000 feet, February 23, 1897; Hills, 1,000 feet, February 25, 1897; and Kao Soi Dao, 1,000 feet, February 8–20, 1899). He records the soft parts as: Iris pale brownish gray; upper mandible dark brown, lower bluish, yellow at the base; feet leaden.

One female had nearly mature eggs and was taken on the Trang Hills, February 25.

The form ranges from Sumatra to the Malay States and northward through Peninsular Siam to Bandon, where it has been recorded by Robinson.[72]

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[71] Ibis, 1920, p. 482

[72] Journ. Federated Malay States Mus., vol. 5, p. 105, 1915.

Three other forms have been described from islands to the westward and to the southeast.

The form is readily distinguished from the two other species of the genus occurring in Peninsular Siam by the light grayish throat and chest, becoming white on the breast and belly; there are no dark nuchal stripes.

MACRONUS PTILOSUS PTILOSUS Jardine and Selby

Macronus ptilosus JARDINE and SELBY, Illustrations of ornithology, pl. 150, 1835 (Malacca).

Five males and one female, Bangnara, Patani, July 11–21, 1926; three males, Sichol, Bandon, May 28, 1930.

Two of the males from Sichol have the under mandible yellow, instead of black, and are probably birds of the year.

Dr. W. L. Abbott collected the following in the Malay Peninsula: four males, Rumpin River, Pahang, May 25–June 25, 1902; one male, Endau River, Pahang, June 27, 1901; one male, Tanjong Dungun, Trengganu, September 21, 1900; one male and one female, Dungun River, Trengganu, September 22, 1900. He describes the soft parts as: Iris brownish red; naked skin about eye pale blue; naked skin on sides of throat dark blue; bill black; feet black or brownish black.

The form occurs from Sumatra to the Malay States and northward in Peninsular Siam to Bandon. A somewhat lighter colored form, *M. p. reclusus* Hartert, occurs in Borneo; and another, *M. p. minor* Riley, in Banka.

Ten males from the Malay Peninsula measure: Wing, 64–70 (67.2); culmen, 15–17 (16) mm. Five males from Sumatra: Wing, 66.5–71 (67.7); culmen, 15.5–17 (16.2) mm.

This is a curious little brown bird with long decomposed flank and rump feathers with stiffened shafts; on the sides of the neck on each side there is a large bare tract with a patch of white, downy, decomposed feathers in the center; the throat is black and the pileum burnt sienna.

KENOPIA STRIATA (Blyth)

Timalia striata BLYTH, Journ. Asiat. Soc. Bengal, vol. 11, p. 793, 1842 (Malay Peninsula).

Dr. W. L. Abbott collected the following in Trang, Peninsular Siam: two adult males and two immature females, Lay Song Hong, September 12–December 5, 1896; two males, hills of Trang, February 3 and 4, 1897; one male and one female, "Trang", February 6 and 27, 1897. He gives the soft parts as: Bill black, whitish at base of lower mandible; feet pale pinkish fleshy.

Two of the specimens are immature and were taken September 12. They are more than half grown, but the tails are not far beyond the coverts. They resemble the adult above, except that the black on the pileum is restricted and more chocolate-brown than black; below the sides of the chest have a few dusky mottlings and the flanks and under tail coverts have a brownish wash; otherwise white. A single specimen from Borneo appears to be a little darker above than the Trang series.

The five adults from Trang measure: Wing, 61.5–66 (63.7); culmen, 13.5–14.5 (13.8) mm. A single male from Borneo: Wing, 68; culmen, 14 mm.

The sexes are alike and apparently do not differ in size, judged from a single female.

The species ranges from Borneo to the Malay States and northward in Peninsular Siam to Trang.

ANUROPSIS MALACCENSIS MALACCENSIS (Hartlaub)

Brachypteryx malaccensis Hartlaub, Rev. Zool., 1844, p. 402 (Malacca).
Anuropsis malaccensis driophila Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 9, 1922 (Kao Soi Dao, Trang).

One male and two females, Sichol, Bandon, August 28, 19, 1929, May 27, 1930.

Dr. W. L. Abbott collected one male and one female at Kao Soi Dao, 1,000 feet, Trang, February 2, 19, 1899; two males, Singapore Island, May 12, 14, 1899; one male and one female, the Dindings, Straits of Malacca, April 13, 15, 1900; one male and one female, Rumpin River, Pahang, May 27, and June 2, 1902. He gives the soft parts as: Iris dark or dull red; upper mandible black or horn brown, lower mandible leaden; feet pale fleshy brown or pinkish fleshy.

Apparently there is little or no difference between the sexes in size or color;

The specimens from Trang and Bandon average a trifle paler above than the series from the Malay States, but the difference is very slight and might disappear in a larger series. In fact, individual specimens that are almost exactly alike can be picked out of either series. In my opinion, the differences are too slight to recognize by name. There is little or no difference in size.

Seven specimens from the Malay States (four males and three females) measure: Wing, 62–72 (67); culmen, 15–17 (16.2); tarsus, 27–30 (28.2); middle toe and claw, 19–21 (20) mm. Five specimens from Trang and Bandon, two males and three females: Wing, 61–70 (65.2); culmen, 15–16.5 (15.7); tarsus, 26–30 (27.7); middle toe and claw, 19–21 (20) mm.

This form ranges from the Malay States northward in Peninsular Siam to Bandon. Robinson and Kloss[73] have recorded it from Trang; Baker[74] from Tung Song; de Schauensee[75] from Nakon Sritamarat.

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[73] Ibis, 1911, p. 60.

[74] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 187, 1919.

[75] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 191, 1934.

In Peninsular Siam there are few records. This may be more apparent than real, as Dr. Abbott in his notes says that it keeps near the ground in dense underbrush in the forest. It is a short-tailed, dull-colored, long-legged bird and evidently spends most of its time on the ground and is easily overlooked. In the Malay States it is probably more abundant.

Several closely related forms have been named from Sumatra and from islands off the west coast of that island. A darker, more richly colored form is found in Borneo.

PSEUDOMINLA CASTANECEPS CASTANECEPS (Hodgson)

Minla castaneceps Hodgson, Indian Rev., vol. 2, p. 33, 1838 (Nepal).

Two males, Doi Angka, 8,000 feet, December 5, 1928; six males and two females, Doi Nangka, November 10–12, 1930, April 22–24, 1931; one male, Doi Hua Mot, August 17, 1934.

The only specimen of *castaneceps* from India with which the above series has been compared has a lighter-brown pileum, and the brown patch at the base of the inner primaries is much lighter also.

The form extends from Sikkim east to Assam north of the Brahmaputra, Burma, south to Tenasserim, and northern Siam, and northwest Tonkin.

Lowe[76] took one 50 miles southeast of Umpang; de Schauensee[77] secured one at Chiengmai, 5,500 feet.

In the mountains of the Federated Malay States *P. c. soror* (Sharpe) occurs. This form may occur also on some of the mountains of Peninsular Siam. It is said to differ from typical *castaneceps* in its larger size, darker olive-brown upper side, and deeper and more chestnut edging to the quills.

HETEROPHASIA PICAOIDES CANA (Riley)

Sibia picaoides cana Riley, Proc. Biol. Soc. Washington, vol. 42, p. 166, 1929 (Doi Angka, Siam).

Heterophasia picaoides burmanica Ticehurst, Bull. Brit. Orn. Club. vol. 55, p. 19, 1935 (Taok Plateau, Burma).

Two males and one female, Doi Angka, 5,000–7,500 feet, December 4 and 6, 1928; one male and one female, Doi Sutep, 5,500 feet, December 15, 1928; two males and one female, Doi Nangka, November 12, 1930, and April 25–26, 1930; two males and one female, Pang Meton (Doi Nangka), May 1–3, 1931; one male, Doi Hua Mot, August 27, 1934.

This was originally described as "similar to *Sibia picaoides picaoides*, but a clearer, purer, and less brownish gray, especially below; the bill smaller." These differences hold with the larger series before me.

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[76] Ibis, 1933, p. 266.

[77] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 194, 1934.

Since it was originally described, this form has been reported from Doi Sutep by several naturalists and has been taken in the mountains of French Laos, Tonkin, and northern Annam. It is a mountain form and probably occurs on other high mountains throughout northern Siam and probably into adjacent territory in Burma.

LEIOPTILA MELANOLEUCA LAETA de Schauensee

Leioptila melanoleuca laeta DE SCHAUENSEE, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 470, 1929 (Doi Sutep, 4,500 feet, northern Siam).

One male and one female, Doi Sutep, December 14 and 15, 1928; three males and one female, Doi Angka, 7,500 feet, December 6, 1928; three males and one female, Doi Nangka, November 2–12, 1930.

This form has been taken at the type locality by several collectors, and de Schauensee [78] on his third expedition took a series there and at Chiengdao and has gone into some details in defense of the race, which seems to be a good one.

LEIOPTILA ANNECTENS SATURATA Walden

Lioptila saturata WALDEN, Ibis, 1875, p. 352 (Karennee, Burma).

One male, Doi Sutep, December 15, 1928; four males and one female, Doi Nangka, November 10–12, 1930, April 22, 26, 1931; one male, Doi Hua Mot, August 12, 1934.

De Schauensee [79] first reported this form from Doi Sutep, and it has since been taken there by several subsequent collectors; later de Schauensee [80] took a series there above 5,000 feet.

I have been unable to compare Dr. Smith's specimens with typical material, and there are some discrepancies between them and Stuart Baker's description.

The form ranges from the eastern hills of Burma south to Karenni and eastward through northern Siam to upper Tonkin.

STAPHIDIA STRIATA STRIATA (Blyth)

Ixulus striatus BLYTH, Journ. Asiat. Soc. Bengal, vol. 28, p. 413, 1859 (10 miles west-northwest of Mount Mooleyit, Tenasserim).

One male and two females, Khun Tan, 4,000 feet, August 30, 1930, and February 18, 1932; two males, Pang Meton (Doi Nangka), May 1, 1931; two males, Doi Nangka, November 19, 1930.

De Schauensee,[81] Deignan,[82] and Chasen and Kloss [83] have recorded it from Doi Sutep, 3,500–5,500 feet, and Chasen and Kloss [84] from the Raheng district of western Siam.

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[78] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 194, 1934.

[79] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 535, 1930.

[80] Proc. Acad. Nat. Sci Philadelphia, vol. 86, p. 195, 1934.

[81] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 535, 1930; vol. 86, p. 195, 1934.

[82] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 138, 1931.

[83] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 245, 1932.

[84] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 176, 1928.

The form ranges from the mountains of Tenasserim north to eastern Burma and northern Siam.

SIVA STRIGULA CASTANICAUDA Hume

Siva castanicauda Hume, Stray Feathers, vol. 5, p. 100, 1877 (Moolyit, Tenasserim).

Four males and two females, Doi Angka, 8,000–8,400 feet, December 5, 6, 1928.

This form is said to range all over Burma from Tenasserim to the Chin and Kachin Hills, and southward it extends to northern Siam.

Specimens of *S. s. yunnanensis* in fresh unfaded plumage are not strikingly different. The pileum is brighter, the mantle browner, and the rufous on the middle tail feathers somewhat deeper

Deignan[85] paid a visit to Doi Angka and took a male at 8,400 feet, April 8, 1931.

A form also is found in the Malay States—*S. s. malayana* Hartert.

SIVA CYANOUROPTERA OATESI Harington

Siva cyanouroptera oatesi Harington, Bull. Brit. Orn. Club, vol. 33, p. 62, 1913 (Byingyi Mountain, Shan Plateau, Burma).

Six males and one female, Doi Nangka, November 10–17, 1930; April 25, 1931; one immature male, Doi Hua Mot, August 30, 1934.

The adults have been compared with a single specimen of *S. c. cyanouroptera.* They are a lighter brown on the mantle; the white tips to the inner remiges are reduced almost to the vanishing point; the pileum is darker.

The immature male from Doi Hua Mot is quite different from the adult. The pileum is drab without any blue, except for a faint line above the white superciliary; back a little lighter than the pileum; rump cinnamon-buff; wings similar to the adults but with more white edging on the inner feathers; the closed tail is quaker drab with a blue tinge near the base; lower parts white, with a slight grayish tinge anteriorly, but much lighter than the adult. It is about adult size and unique in plumage.

So far as known, this form is confined to the Shan Plateau, Burma, and northern Siam.

De Schauensee,[86] Deignan,[87] and Chasen and Kloss[88] have recorded it from Doi Sutep, 4,600–5,500 feet; de Schauensee[89] on his third expedition took it also at Chiengdao at 4,500 feet.

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[85] Proc. Biol. Soc. Washington, vol. 47, p. 91, 1934.

[86] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 535, 1930.

[87] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 138, 1931.

[88] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 245, 1932.

[89] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 196, 1934.

SIVA SORDIDIOR SORDIDIOR Sharpe

Siva sordidior SHARPE, Proc. Zool. Soc. London, 1888, p. 276 (Batang Padang Mountains, Perak).

One male and three females, Kao Luang, 3,000–4,000 feet, Nakon Sritamarat, Peninsular Siam, July 14–20, 1928.

Robinson and Kloss [90] have assigned Kao Nawng, Bandon, and Kao Luang, Nakon Sritamarat, specimens to *Siva cyanouroptera sordidior* Sharpe described from the mountains of Perak, but they say the identification is doubtful, as the specimens upon which the records rest are in bad shape. They say also that *sordidior* is not very strongly differentiated from *S. c. sordida* Hume. I have not been able to examine a specimen of the latter, but *sordidior* in my opinion is not a form of *cyanouroptera* at all, but a distinct species of which *orientalis* of southern Annam is a form.

S. s. sordidior and *S. s. orientalis* differ from the *cyanouroptera* forms in lacking the white superciliary; in having blue of pileum dull and very barely perceptible in certain lights; outer margins of inner primaries and all the secondaries almost white or barely tinged with bluish; white on the inner margins of the outer tail feathers, more restricted; blue of tail dull and showing only in certain lights basally; tail slightly darker grayish brown like the back.

S. s. sordidior ranges from the mountains of the Malay States north to Bandon.

ERPORNIS ZANTHOLEUCA ZANTHOLEUCA Hodgson

Erpornis zantholeuca HODGSON, Journ. Asiat. Soc. Bengal, vol. 13, p. 380, 1844 (Nepal).

One female, Bo Ploi, Kanburi, September 26, 1929; two females, Doi Nangka, April 25, 1931; one male, Doi Hua Mot, August 27, 1934; one male, Khun Tan Mountains, 3,000 feet, May 10, 1933; one female, Khun Tan, August 29, 1930; two males, Aranya, July 16, 17, 1930; two males, one female, and one unsexed, Pak Chong, February 17, May 9, and November 15, 18, 1925; one male, Tha Chang, Pak Chong, March 22, 1927; three males, Lam Klong Lang, near Pak Chong, June 3–14, 1925; one male and two females Hin Lap, December 9, 11, 1931; one male, Lamton Lang, June 1, 1934.

Quite a number of the above specimens have slight remains on the back and nape of an earlier plumage, which is tawny-olive and mixed in with the yellowish citrine of the succeeding plumage. It occurs on specimens taken from May 10 until the latter part of August, but there is one specimen collected as early as March 22, and another collected April 25, with the nape tawny-olive. The latter (no. 330550), from Doi Nangka, has the lores and a ring around the eye massicot yellow and is unique in the series in this respect.

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[90] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 302, 1924.

I have seen no specimens from Nepal or Burma but have a specimen from Fokien of *griseiloris*, and it most certainly is not that form, which has the lores, cheeks, and underparts decidedly gray; in the present form, they are grayish white.

De Schauensee [91] compared a male from Khun Tan with a female from Assam and states they agree perfectly. The specimens from eastern Siam agree with those from northern Siam.

Ten males from northern, central, and eastern Siam measure: Wing, 61–70 (64.9); tail, 41–47 (43.6); culmen, 12–13 (12.2) mm. Seven females: Wing, 61–66 (63.5); tail, 41–43 (41.8); culmen, 11.5–12.5 (12) mm.

The present form ranges from Nepal, Assam, and Burma to northern, central, and eastern Siam.

Deignan [92] found it on Doi Sutep from 2,700–4,000 feet. I do not believe this is primarily a mountain bird, however, but ranges down to sea level.

ERPORNIS ZANTHOLEUCA INTERPOSITA Hartert

Herpornis xantholeuca interposita HARTERT, Bull. Brit. Orn. Club, vol. 38, p. 20, 1917 (Temangoh, Upper Perak).

One female, Bangnara, Patani, May 10, 1924; one male, Kao Soi Dao, Trang, December 30, 1933; one female, Waterfall, Trang, August 25, 1933; one male, Kao Luang, 2,000 feet, Nakon Sritamarat, July 16, 1928.

Dr. W. L. Abbott collected six males and three females in Trang (Prahmon, April 10, 1896; Lay Song Hong, September 10–December 20, 1896; Kao Nok Ram, 2,000 feet, January 16, 1899; and Trang, February 3, 7, 1897); four males and one female, Mergui Archipelago (St. Matthew Island, January 15, 1900; Sullivan Island, February 3, 4, 1900; Domel Island, February 23, 1900); and one female, Rumpin River, Pahang, June 11, 1902. He describes the soft parts as: Iris brown or gray brown; upper mandible pale horn brown, lower pale fleshy; feet pale fleshy or fleshy white.

A female shot by Dr. Abbott in Trang, February 3, contained nearly mature eggs.

This form is distinguished from the northern race (*zantholeuca*) by the longer, heavier bill, averaging slightly grayer below, the upper parts more yellowish, and the underside of the tail darker with the inner margins of the feathers with less yellow.

Seven males from Peninsular Siam measure: Wing, 64–74 (68.3); tail, 41–48 (44.3); culmen, 13–14 (13.6) mm. Four males from the Mergui Archipelago: Wing, 68–72 (70.2); tail, 43.5–46.5 (45.2); culmen, 13–14 (13.7) mm. Six females from the Malay Peninsula:

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[91] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 196, 1934.

[92] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 138, 1931.

Wing, 62.5–68 (64.9); tail, 38.5–42.5 (40.7); culmen, 13–14 (13.3) mm. One female form the Mergui Archipelago: Wing, 66.5; tail, 43; culmen, 13.5 mm.

This form ranges from southern Tenasserim south through Peninsular Siam to the Malay States.

It occurs throughout Peninsular Siam. Robinson [93] records it from Langkawi and from Kao Nawng, Bandon;[94] Glydenstolpe[95] records a specimen from Koh Lak Paa; Robinson and Kloss [96] from Renong River; Tasan, Chumporn; and Hat Sanuk; Grant [97] from Patani.

ERPORNIS ZANTHOLEUCA CANESCENS Delacour and Jabouille

Erpornis xantholeuca canescens Delacour and Jabouille, Bull. Brit. Orn. Club, vol. 48, p. 132, 1928 (Bokor, 1,000 meters, southern Cambodia).

One male, Hupbon, November 5, 1931; one male, Nong Khor, near Sriracha, September 26, 1925; four males, Kao Sabap, November 1–17, 1933; one male, Kao Kuap, Krat, December 24, 1929.

This small series of males from southeastern Siam differs from the series from northern and eastern Siam in being less yellowish above and the pileum and nape with a grayish cast, not the same as the color of the back. De Schauensee [98] has also referred specimens from Chantabun and Sriracha to this form.

The seven males measure: Wing, 62–69 (67.3); tail, 42.5–49 (45.6); culmen, 11.5–13 (12.2) mm.

The form ranges from Cambodia to southeastern Siam. Two other forms occur in southern China and one in southern Annam.

CUTIA NIPALENSIS NIPALENSIS Hodgson

Cutia nipalensis Hodgson, Journ. Asiat. Soc. Bengal, vol. 5, p. 774, 1836 (Nepal).

One male and three females, Doi Nangka, November 6, 1930; one male, Pang Meton (Doi Nangka), May 1, 1931. Dr. Smith describes the soft parts as: Iris reddish brown; bill above black, below dark blue; legs deep yellow.

Deignan,[99] Chasen and Kloss,[1] and de Schauensee [2] report it from Doi Sutep, 5,500 feet.

The form ranges from Nepal to eastern Assam and south through Burma to northern Siam and northwestern Tonkin.

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[93] Journ. Federated Malay States Mus., vol. 7, p. 179, 1917.

[94] Journ. Federated Malay States Mus., vol. 5, p. 107, 1915.

[95] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 62, 1916.

[96] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 303, 1924.

[97] Fasciculi Malayenses, pt. 3, p. 80, 1905.

[98] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 196, 1934.

[99] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 138, 1931.

[1] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 8, p. 245, 1932.

[2] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 196, 1934.

PTERUTHIUS AERALATUS AERALATUS Tickell

Pteruthius aeralatus Tickell, Journ. Asiat. Soc. Bengal, vol. 24, p. 267, 1855 (Tenasserim).

Two males, Doi Angka, 4,000 feet, December 3, 1928; ten males and six females, Khun Tan Mountains, 4,000–4,500 feet, November 21–22, 1928, October 16, 1929, August 24–September 2, 1930, February 27–March 4, 1932, May 12–15, 1933; five males and five females, Doi Nangka, November 3–21, 1930, April 24, 28, 1931; one male and two females, Pang Meton (Doi Nangka), May 4, 1931; two males and one female, Doi Kiew Koh, December 25, 1932; one male, Doi Mana, December 30, 1932; five males and five females, Doi Hua Mot, August 12–September 27, 1934; three males and one female, Kao Luang, 4,000 feet, Nakon Sritamarat, July 20, 1928.

Dr. W. L. Abbott collected three males and two females, Kao Nom Plu, 3,000 feet, Trang, February 20–26, 1897. He gives the soft parts as: Iris grayish blue; bill black above, leaden blue beneath; feet pale pinkish fleshy.

The six males and three females from Peninsular Siam when compared with the large series from northern Siam in the case of the males are somewhat darker on the mantle and back, and in the case of the females the pileum is a dingier gray and the white tips to the primaries more reduced. The Peninsular birds are also smaller, but whether the differences are sufficient to found a race upon, I am doubtful.

Table 3.—*Average measurements of* Pteruthius aeralatus

Specimens	Wing	Tail	Culmen
	Mm	*Mm*	*Mm*
Ten males from northern Siam	79	55.4	14.7
Six males from Peninsular Siam	74.6	50	14.3
Ten females from northern Siam	80	56.5	14.7
Three females from Peninsular Siam	73.8	48.7	14.3

The young male at first resembles the female. The tail and wing then become like the adult male, then the back. The black of the head apparently is not acquired until much later; one young male has begun to turn black on the auriculars. All the young males have the under tail coverts washed with light yellow, but how long this is retained is uncertain.

Recently authors generally have been treating *aeralatus* as a form of *P. flaviscapis* of Java, but in my opinion the latter is distinct enough to rank as a separate species. There are two additional races of *aeralatus* on the continent, however: *P. a. ricketti*, of southern and southwestern China, a larger and grayer bird below than *aeralatus*, and *P. a. annamensis*, of the Langbian Plateau, southern Annam, differing from *aeralatus* in the absence of the black edges to the innermost remiges and the reduction of the white tips to the primaries. *P. a. cameranoi* occurs in Sumatra.

P. a. aeralatus ranges from eastern Burma south through northern Siam and Tenasserim to the Federated Malay States; eastward it extends to Cambodia, eastern Tonkin, northern Laos, and northern Annam.

In Peninsular Siam apparently it occurs only on mountains of sufficient elevation. Beside the localities where it was taken by Dr. Abbott and Dr. Smith, Robinson [3] reports it from Kao Nawng, above 2,000 feet, Bandon; in northern Siam, Deignan [4] reports that on Doi Sutep it is found from 3,500 to 5,500 feet. It has also been taken on Doi Nga Chang and at Chiengdao and probably occurs on all the mountains in the north. Though I have seen no records from eastern Siam, it probably occurs there.

PTERUTHIUS AENOBARBUS INTERMEDIUS (Hume)

Allotrius intermedius HUME, Stray Feathers, vol. 5, p. 112, 1877 (central Tenasserim Hills).

One male, Khun Tan, October 20, 1929; one male, Doi Nangka, November 12, 1930; two males and three females, Doi Hua Mot, August 19–26, 1934.

Deignan [5] found it once on Doi Sutep, 5,300 feet. De Schauensee [6] states that it is not a common bird in northern Siam.

This form occurs from the eastern hills of Burma and Tenasserim through the mountains of northern Siam to Laos and Tonkin. *P. a. laotianus* has been described from Xieng-Khouang, Laos; *P. a. indochinensis* from Djiring, southern Annam; and *P. a. aenobarbus* from Java.

MESIA ARGENTAURIS GALBANA Mayr and Greenway

Mesia argentauris galbana MAYR and GREENWAY, Proc. New England Zool. Club, vol. 17, p. 3, 1938 (Doi Angka, Siam).

One female, Doi Angka, 4,000 feet, December 4, 1928; one male and one female, Doi Nangka, April 24, 1931; three males and two females, Pang Meton (Doi Nangka), May 1–4, 1931.

It has been recorded from Doi Sutep by de Schauensee,[7] Deignan,[8] and Chasen and Kloss.[9] Deignan says it occurs between 5,000 and 5,500 feet.

The form ranges from the Southern Shan States to northern Siam.

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[3] Journ. Federated Malay States Mus., vol. 5, p. 107, 1915.

[4] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 138, 1931.

[5] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 175, 1931.

[6] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 197, 1934.

[7] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 536, 1930; vol. 86, p. 197, 1934.

[8] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 139, 1931.

[9] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 245, 1932.

MESIA ARGENTAURIS TAHANENSIS Yen

Mesia argentauris tahanensis Yen, Science Journ. (Sun Yat-Sen Univ.), vol. 6, no. 2, p. 63, 1934 (Mount Tahan, Pahang).

Two males, Kao Luang, 3,000 feet, Nakon Sritamarat, July 14, 1928.

These two specimens when compared with four males from northern Siam are more of a buffy citrine on the back, and the collar on the hindneck is a deeper yellow; below there is little or no difference. A male and a female from the Semangko Pass, Selangor-Pahang boundary, when compared sex for sex with northern specimens have the hindneck collar a much deeper yellow also. The two males from Kao Luang are not so deep a yellow in the hindneck collar or on the throat and chest as the Semangko male.

The United States National Museum possesses a male from Sikkim that in the color of the hindneck collar and the throat approaches the Semangko male; the back lacks the buffy citrine of the more southern bird, however, and in this respect approaches the northern Siamese series but is even grayer. In measurements the Kao Luang males agree with northern specimens. As a matter of fact they are somewhat intermediate, but probably they had better be placed with the southern form for the present.

Seven specimens from northern Siam (four males and three females) measure: Wing, 76–80 (77.9); tail, 69–73 (70.6); culmen, 14–15.5 (14.7) mm. Two males from Kao Luang: Wing, 81, 81; tail, 74, 74; culmen, 15, 15.5 mm. One male (first) and one female from Semangko: Wing, 74, 71; tail, 69, 71; culmen, 14, 14 mm.

M. a. tahanensis was reported from Kao Nawng, Bandon, above 3,000 feet, by Robinson [10] and from Kao Luang, between 3,000–5,800 feet, Nakon Sritamarat, by Robinson and Kloss.[11] In the high mountains of the Malay States apparently it is more abundant and more widely distributed.

The form ranges from the mountains of the Malay States northward to the mountains of Bandon, Peninsular Siam.

A form occurs in the mountains of Tonkin, one in southern Annam, one in Sumatra, and two in Burma.

Family PYCNONOTIDAE: Bulbuls

AETHORHYNCHUS LAFRESNAYEI LAFRESNAYEI (Hartlaub)

Iora lafresnayei Hartlaub, Rev. Zool., 1844, p. 401 (Malay Peninsula).

Two males, Bangnara, Patani, July 10 and 18, 1926; one male, Yala, Patani, January 30, 1931; one female, Bukit, Patani, no date;

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[10] Journ. Federated Malay States Mus., vol. 5, p. 107, 1915.

[11] Journ. Federated Malay States Mus., vol. 11, p. 62, 1923.

two females, Huey Yang, Kao Luang, Nakon Sritamarat, October 1 and 6, 1930; one male and one female, Tha Lo, Bandon, September 14 and 25, 1931; one male, Kao Soi Dao, Trang, December 21, 1933; one male, Waterfall, Trang, August 24, 1933.

Dr. W. L. Abbott took three males and four females in Trang, February 13, 1897, December 30–31, 1898, January 5 and 27, 1899. He gives the color of the soft parts as: Iris dark brown; bill leaden blue, culmen black; feet leaden blue.

All the males in this series have the upperparts strongly washed with black, even those taken in winter, but, with the exception of one taken by Dr. Abbott, December 30, not quite so strongly as the July specimens. The specimens collected by Dr. Smith from Pran, southwestern Siam, northward and eastward in Siam, are all yellowish green above, with little or no blackish wash, no matter whether taken in the breeding season or not; in some the inner web of rectrices have more or less black and they have been assigned to the next race, *innotatus*, rectrices of the males of the Peninsular birds being entirely black in breeding specimens at least.

The seven males from Peninsular Siam measure: Wing, 67–75 (71.8); culmen, 20–22 (21.1) mm. Eight females: Wing, 67.5–72 (69.7); culmen, 20–22 (20.6) mm.

Robinson and Kloss [12] record this race from the northern end of Peninsular Siam as far as Hat Sanuk, southwestern Siam, but remark that the specimens show very little black above. From this I gather they are more or less intermediate between this and the next race (*innotatus*).

The range of *A. l. lafresnayei* is from the Malay States north through Peninsular Siam to possibly southern Tenasserim, but just how far north is not known. Dr. Smith took *A. l. innotatus* as far south as Koh Lak, which is a few miles east of Hat Sanuk.

Robinson and Kloss [12] record *A. l. lafresnayei* from Tung Pran, Renong River, Mamoh, Tapli, Tasan, and Hat Sanuk. These records probably represent its northern limit.

AETHORHYNCHUS LAFRESNAYEI INNOTATUS (Blyth)

Iora innotata Blyth, Journ. Asiat. Soc. Bengal, vol. 16, p. 472, 1847 (Arracan).

Two males and two females, Pran, May 26, 1928; April 1–4, 1931; three males, Koh Lak, June 7–22, 1933; six males and two females, Pak Chong, May 14–16, 1925, November 19–December 8, 1929; one female, Lam Klong Lang, Pak Chong, June 5, 1925; two males and one female, Tha Chang, Pak Chong, March 20, 1927, January 2, 1931; two males and one female, Sikeu, near Korat, February 8, March 1 and 4, 1926; one female, Lat Bua Kao, August 7, 1929; one female, Hupbon, November 5, 1931; one male and two females, Hin Lap, October 1 and December 10, 1931; one male, Kumpawapi, February 17, 1929; one male and one female, Aranya, July 16, 17, 1930; one male, Kao Seming, Krat, October 16, 1928; one male, Kao Sabap, November 3, 1933.

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[12] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 259, 1924.

In the above series, the males have little or no black on the upperparts at any season. They are serpentine green above, the pileum more yellowish. Below the yellow is less bright than in *A. l. lafresnayei* and the tail is yellowish citrine, the outside rectrices sometimes with a little black on the inner web, never all black as in the Malay race; bills a little smaller than the latter.

Ten males of *innotatus* measure: Wing, 68–73 (70.4); culmen, 19–21.5 (19.7) mm. Ten females: Wing, 66–70 (68.1); culmen, 18–20.5 (19.2) mm.

The present form ranges from Arracan, Burma, through northern Tenasserim to southwestern, central, eastern, and southeastern Siam, French Laos, Tonkin, and northern and central Annam.

In Cochinchina, southern Cambodia, and southern Annam *A. l. xanthotis* occurs. It is more yellowish on the back than *innotatus*, and evidently does not reach to northwestern Cambodia as the two specimens taken near the border in southeastern Siam seem to belong to the northern race though somewhat more yellowish on the pileum.

De Schauensee [13] took a male at Chiengsen, January 9, and remarks that it seems to be a rare bird in northern Siam. This is the only record I have seen from the northern part of the country.

AEGITHINA TIPHIA TIPHIA (Linnaeus)

Motacilla tiphia Linnaeus, Systema naturae, ed. 10, p. 186, 1758 (Bengal).

Two males and one female, Bukit, Patani, January 26 and 27, 1931; one female, Singora, June 29, 1929; one female, Nakon Sritamarat, September 21, 1896; one male and one female, Pran, April 1, 1931; three males, Koh Lak, June 9–14, 1933; three males and five females, Muang Kanburi, April 10–15, 1928; one female, Aranya, July 14, 1930; 13 males and eight females, Bangkok, January 18 and March 11, 1924, October 26–December 31, 1925, April 8–June 26, 1926, September 20–23, 1930, May 12, 14, 1934; one female, Lomkao, February 20, 1934; one female, Bung Borapet, June 22, 1932; one male, Doi Angka, lower slopes, December 9, 1928; one male and one female, Chiengmai, November 25, 1928; two males and one female, Nan, April 14–23, 1930; two males, Ban Nam Kien, Nan, April 18–22, 1930; two males and one female, Prae, April 11, 1930; one male and one female, Ban Tai Yai, July 8–9, 1928; one male, Knong Phra,

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[13] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 536, 1930.

April 12, 1929; one female, Lat Bua Kao, July 31, 1929; one male and one female, Pak Chong, December 22, 1926, and November 29, 1929; one male, Tha Chang, March 17, 1927; one male, Bua Yai, Korat Plateau, February 15, 1929; one female, Muek Lek, April 26, 1933; one male, Chantuk, June 12, 1934; one male, Sriracha, April 19, 1934; one female, Kao Seming, Krat, October 12, 1928.

Dr. W. L. Abbott took the following in the Malay Peninsula: Five males and three females, Trang (Prahmon, February 21–March 24, 1896; Tyching, April 24, 1896; Kantany, January 16, 1897; Trang, January 21, 1899); one male and two females, Trengganu (Dungun River, September 19, 1900; Tanjong Dungun, September 20 and 21, 1900); one male, mouth of Rumpin River, Pahang, May 20, 1902. He gives the color of the soft parts as: Iris white or grayish white; bill leaden blue, culmen black; feet plumbeous or leaden blue.

In this large series there are very few males with much black on the upperparts, and when present it is confined mostly to the pileum and nape. There seems to be little or no difference between Peninsular Siam specimens and those from farther north. The male collected by Dr. Abbott in Pahang should represent *A. t. singapurensis* Chasen and Kloss,[14] but in the series from Bangkok there is a male that has even more black. Dr. Oberholser described this dark bird from Banka as *A. t. micromelaena*,[15] and, if worthy of recognition, the latter name will have to be used.

The male from Pahang measures: Wing, 64; tail, 46.5; culmen, 15 mm. Four males from Banka: Wing, 59–63 (61.5); tail, 44–45.5 (44.9); culmen, 15–17 (15.6) mm. Seven males from the Malay Peninsula, north of the Federated States: Wing, 61–65 (62.4); tail, 43–47 (44.8); culmen, 15–16 (15.3) mm. Ten males from Siam proper: Wing, 60–67 (63.8); tail, 43–53 (47.5); culmen, 14.5–16 (14.8) mm.

De Schauensee [16] states that specimens from northern Siam have paler throats and backs than birds from Bangkok southward. My series of males from northern Siam is a small one and does not show the deeper yellow throat of the southern bird; possibly the backs of the northern specimens average somewhat paler, but birds can be picked out of my series from the Malay Peninsula that are just as pale. I believe the deeper yellow throats are due to age, as there are a number in my series that are molting from a lighter to a deeper yellow throat, and this also applies to the color of the back. At first the young male resembles the female, the darker back of the fully adult male being acquired only after several molts.

The present form extends eastward from Bengal to Burma, Assam, Siam, and Indo-China, except the north; southward it extends down

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[14] Bull. Raffles Mus., no. 5, p. 85, 1931.

[15] Smithsonian Misc. Coll., vol. 76, no. 6, p. 7, 1923.

[16] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 199, 1934.

Peninsular Siam to Trengganu; specimens from Singapore and the southern end of the Malay Peninsula are doubtfully separable.

AEGITHINA VIRIDISSIMA VIRIDISSIMA (Bonaparte)

Jora viridissima BONAPARTE, Conspectus generum avium, vol. 1, p. 397, 1850 (Sumatra and Borneo; restricted to Sumatra).

One female, Bukit, Patani, January 23, 1931.

Dr. W. L. Abbott took a female on Pulo Langkawi, December 3, 1899.

This form occurs from southern Tenasserim south through Peninsular Siam to Singapore, Cochinchina, and Sumatra. Other forms occur in the Natunas, Anambas, and Borneo.

Robinson and Kloss record it from Trang [17] and Junkseylon (Puket) [18]; Robinson [19] from Pulo Terutau; Kloss [20] from Koh Lak; de Schauensee [21] from Nakon Sritamarat.

CHLOROPSIS AURIFRONS AURIFRONS (Temminck)

Phyllornis aurifrons TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 81, pl. 484, fig. 1, 1829 (district Pallemberg, Sumatra; error; India).

One male, Doi Nangka, lower slopes, December 9, 1928; one male, Nan, April 16, 1930; one male, Ban Nam Kien, Nan, April 21, 1930; one male, Mesuya Valley, January 2, 1933; one male, Mae Hong Sorn, January 8, 1933.

De Schauensee [22] records it from Chiengmai, Doi Sutep, 2,000 feet, Chiengrai, and Mechai; all localities in northern Siam. Deignan [23] gives it as common on Doi Sutep, 1,100–2,500 feet; Chasen and Kloss [24] record it from Raheng, western Siam. Two of the latter (male and female) upon which the record was founded were later acquired by the United States National Museum.

The range of the form is from the Himalayas of Garhwal and Simla to eastern Assam, the hill country of north and northeastern India, the whole of Burma and north and western Siam; it has been recorded from central Siam, but the records are doubtful.

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[17] Ibis, 1911, p. 55.

[18] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 106, 1919.

[19] Journ. Federated Malay States Mus., vol. 7, p. 171, 1917.

[20] Ibis, 1918, p. 197.

[21] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 200, 1934.

[22] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 537, 1930.

[23] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 139, 1931.

[24] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 174, 1928.

CHLOROPSIS AURIFRONS INORNATUS Kloss

Chloropsis aurifrons inornatus Kloss, Ibis, 1918, p. 198 (Lat Bua Kao, eastern Siam).

One male, Sikeu, near Korat, March 16, 1926; two males, Pak Chong, June 20, 26, 1934; one male and one female, Chantuk, June 12, 14, 1934; one male, Ban Nakae, March 4, 1929; one male, Lat Bua Kao, August 10, 1929; one male and one female, Lem Sing, Chantabun, June 9, 1926; one male, Ban Manoa Wan, October 19, 1932; one male, Ban Mekok, October 20, 1932; one male, Muang Kanburi, September 10, 1928; one male, Wang Kien, March 13, 1934; one male, Sam Roi Yot, November 13, 1932; one male, Koh Lak, June 15, 1933.

The male from Sikeu and the male from Lat Bua Kao have a yellow fringe below the black of the throat but not nearly so pronounced as in typical *aurifrons*.

De Schauensee [25] records *C. a. inornatus* from Nakon Nayok and says that it replaces the northern form in southern Siam, and on his third expedition he took specimens at Konken, Kengkoi, and Tamuang.[26] Kloss [27] records it from Koh Lak; Robinson and Kloss [27a] from Koh Lak and Hat Sanuk.

The form ranges from southern Tenasserim north through southwestern Siam to southern and eastern Siam, Laos, Cambodia, Annam, and Cochinchina.

The males of this form differ from typical *aurifrons* in lacking or having the yellow surrounding the black throat patch much reduced.

CHLOROPSIS HARDWICKII HARDWICKII Jardine and Selby

Chloropsis hardwickii Jardine and Selby, Illustrations of ornithology, vol. 2, pt. 7, Appendix, p. 1, 1830 (Nepal).

Seven males and one female, Khun Tan Mountains, 2,000–4,200 feet, November 19–23, 1928, May 13, 15, 1933; four males and two females, Khun Tan, October 18–21, 1929, August 23–27, 1930; four males and three females, Doi Nangka, November 17, 1930; one female, Pang Meton (Doi Nangka), May 1, 1931; one male, Doi Kiew Koh Ma, December 25, 1932; three males and two females, Doi Hua Mot, August 12–24, 1934.

I do not think the above series represents typical *hardwickii* nor does it agree with the description of *malayana*. Only two Indian male specimens have been available for comparison and they differ considerably from the fine series of Siamese males; the pileum is olive-ocher with a slight greenish wash, while in the Siamese series the pileum is strongly washed with greenish, the frons and a border to the black throat patch being reed yellow.

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[25] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 537, 1930.

[26] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 200, 1934.

[27] Ibis, 1918, p. 198.

[27a] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 260, 1924.

Ten adult males from Siam measure: Wing, 87–96 (92.9); culmen, 19.5–20.5 (19.9) mm. Six adult females from Siam: Wing, 82–88 (86); culmen, 18.5–20 (19.3) mm. The wing in these seems to average less than in the measurements given by Stuart Baker [28] and he does not segregate the sexes. My measurements show the female to be considerably smaller.

The only female of *malayana* examined is from the Semangko Pass, Selangor-Pahang boundary. The wing is no smaller (85 mm) than in the Siamese series, but the lesser wing coverts are a deeper blue and the primary coverts are washed with blue, while in the northern form there is little or no blue wash. The culmen in this specimen measures 17 mm, which is smaller than in northern birds.

A male in the United States National Museum from near Laichau, Tonkin, more nearly resembles the Indian bird than that from Siam, but the yellow of the pileum is lighter and has more of a greenish wash than the former; wing, 91 mm.

Chasen and Kloss,[29] in commenting upon a male from Doi Sutep, have likewise noted the intermediate character of the Siamese bird, as has also de Schauensee [30] in writing upon a series from Chiengmai, Khun Tan, Chiengdao, and the southern Shan States, but he believes the northern Siamese bird to be nearer *malayana* than *hardwickii*. He apparently did not make a direct comparison with either. It seems best to leave the northern Siamese race with the nominate form for the present.

C. h. hardwickii ranges from the Himalayas at Simla east to eastern Assam and south through Burma to the Shan States and Tenasserim and east through northern Siam to Laos, Tonkin, and northern Annam.

CHLOROPSIS COCHINCHINENSIS COCHINCHINENSIS (Gmelin)

Turdus cochinchinensis GMELIN, Systema naturae, vol. 1, pt. 2, p. 825, 1789 (Cochinchina).

Seven males and one female, Kao Luang, Nakon Sritamarat, July 14–20, 1928; one female, Patalung, July 7, 1929; three males and one female, Sichol, Bandon, August 31–September 1, 1929; six males and three females, Tha Lo, Bandon, September 18–27, 1931; two males, Kao Soi Dao, Trang, December 28, 1933, January 23, 1934; one male, Waterfall, Trang, August 26, 1933; two males and one female, Hupbon, near Sriracha, May 25, 1925, October 31–November 3, 1931; one male and one female, Sikeu, near Korat, February 16, 1926; one female, Nong Khor, near Sriracha, November 15, 1924; two males and one female, near Krabin, May 2–8, 1928; one male and three females, Kao Seming, Krat, October 10–16, 1928, January 2, 1930; three males, Kao Sabap, October 24 and 30, 1933; one female, Lam Klong Lang, Pak Chong, June 4, 1925; one male and one female, Pak Chong, November 15, 1925 and November 19, 1929; one male, Pran, April 1, 1931; four males and three females, Nong Yang, October 20–November 16, 1931; one male, Hin Lap, November 6, 1931; four males and one female, Khun Tan, 3,000 feet, August 25–September 7, 1930, February 16, 1932; one male and one female, Aranya, July 13, 1930; one male, Mae Hong Sorn, January 3, 1933; one male, Meserieng, January 20, 1933; one male, Muek Lek, April 17, 1933.

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[28] The fauna of British India, Birds, ed. 2, vol. 1, p. 349, 1922.

[29] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 242, 1932.

[30] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 200, 1934.

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula Region: Seven males and five females, Trang (Lay Song Hong, September 8–November 15, 1896; Tyching, July 3, 1896; Prahmon, February 22 and March 3, 1896; Kao Soi Dao, 1,500 feet, February 15, 1899; near Kao Nok Ram, January 5, 1899; Kao Nok Ram, 3,000 feet, January 15, 1899; Trang, January 4, 27, 1897); one male, and four females, Mergui Archipelago (Bentinck Island, March 8, 1900; Helfer Island, March 6, 1900); one female, Victoria Point, Tenasserim, March 31, 1900; one male, Maliwun, Tenasserim, March 25, 1900.

There is an average difference between a series from northern and eastern Siam and a series from Peninsular Siam. The Peninsular series has a more yellowish tinge to the upper back and the blue on the wing is deeper; the average size is a little greater.

Ten males from eastern and northern Siam measure: Wing, 82–86.5 (83.9); culmen, 16–17 (16.5) mm. Ten males from Peninsular Siam: Wing, 83–88.5 (85); culmen, 17–19 (18) mm.

While these differences are average, yet individual specimens from either series can be picked out that exactly or nearly match in size and color.

This form ranges from south of the Brahmaputra in Assam south through Burma and northern Siam down Peninsular Siam to about latitude 6° 30′ N.; eastward it extends to Cambodia, Cochinchina, Laos, and Annam. Apparently it is a very common bird all over Siam proper and in Peninsular Siam. The present form is distinguished from *icterocephala* by having the crown greenish and the yellow on the side of neck less extensive.

CHLOROPSIS COCHINCHINENSIS ICTEROCEPHALA (Lesson)

Phyllornis icterocephalus Lesson, Rev. Zool., 1840, p. 164 (Sumatra and Borneo).

One male, Bangnara, Patani, July 4, 1926.

Dr. W. L. Abbott collected one female, Packa, Trengganu, September 27, 1900, and two immature males, Rumpin River, Pahang, June 9 and 21, 1902.

This form can be distinguished from *cochinchinensis* by having the pileum more extensively yellow, with little or no greenish wash. It ranges from Sumatra through the Malay States north to about latitude 6° 30′ N. and barely reaches Peninsular Siam in Patani.

CHLOROPSIS SONNERATI ZOSTEROPS Vigors

Chloropsis zosterops Vigors, *in* Raffles's Memoir of Sir Thomas Stamford Raffles, p. 674, 1830 (Sumatra).

One male, Bangnara, Patani, May 17, 1924; two males, Tha Lo, Bandon, September 21, 1931; one male and two females, Kao Soi Dao, Trang, December 28, 1933, January 6, 1934. Dr. Smith gives the soft parts as: Iris dark brown; bill black; legs light blue.

Dr. W. L. Abbott collected the following: Six males and three females, Trang (Prahmon, March 5 and 9, 1896; Lay Song Hong, November 28, 1896; Trang, February 5 and 8, 1897, January 1 and 3, 1899; Kao Soi Dao, 1,000 feet, February 14, 1899); two females, the Dindings, Straits of Malacca, April 13 and 16, 1900; one female, Victoria Point, Tenasserim, March 31, 1900. He gives the soft parts as: Iris dark brown; bill black (male); black, lower mandible whitish at base (female); feet leaden.

The series of seven adult males from the Malay Peninsula are slightly less yellowish green above and below than four males from Sumatra and one from Banka. Four males from Borneo are more yellowish green above and below even than the Sumatran series. The difference between the Sumatran and the mainland bird is slight.

Seven males from Peninsular Siam measure: Wing, 99–103 (101); culmen, 20–22.5 (21.3 mm). Four males from Sumatra and one from Banka: Wing, 97.5–102 (99.3); culmen, 20.5–22 (21.2 mm). Four males from Borneo: Wing, 100–102 (101); culmen, 21–22 (21.4 mm).

This form ranges from Banka and Sumatra north through the Malay States and Peninsular Siam to southern Tenasserim.

Robinson[31] records it from Pulo Telibun, Trang, and Pulo Lontar; Robinson and Kloss[32] from Kao Ram, 1,200 feet, Nakon Sritamarat, and later from Tung Pran, Takuatung, Koh Pra Tung, Takuapa, and Namchuk, Pakchan.[33]

C. s. sonnerati Jardine and Selby[34] is confined to Java and *C. s. viriditectus* Hartert to Borneo.

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[31] Journ. Federated Malay States Mus., vol. 7, p. 171, 1917.

[32] Journ. Federated Malay States Mus., vol. 11, p. 61, 1923.

[33] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 261, 1924.

[34] Illustrations of Ornithology, ser. 1, vol. 1, pt. 1, p. [19], 1826 (India et insulis); vol. 2, text to pl. 100, 1830 (Java).

CHLOROPSIS CYANOPOGON SEPTENTRIONALIS Robinson and Kloss

Chloropsis cyanopogon septentrionalis ROBINSON and KLOSS, Journ. Nat. Hist. Soc. Siam, vol. 3, p. 107, 1918 (Nong Kok, Ghirbi, Peninsular Siam).

Two females, Patalung, July 18, 1929; three males, Tha Lo, Bandon, September 18–27, 1931; one female, Sichol, Bandon, May 19, 1930.

Dr. W. L. Abbott collected two males at Prahmon, Trang, February 22 and March 23, 1896, and one male, near Chong, Trang, January 24, 1897. He gives the soft parts as: Iris dark brown; bill black; feet plumbeous.

The above series of males differs from two males of *C. c. cyanopogon* from Sumatra in being somewhat smaller and in having the foreheads tinged with yellow and the black throat patch bordered below with yellow.

Six males from Peninsular Siam measure: Wing, 80–83 (80.7); culmen, 15–17 (15.9 mm). Two males from Sumatra: Wing, 81, 85; culmen 17, 17 mm.

This form ranges from southern Tenasserim south through Peninsular Siam to about Kedah. To the north Robinson and Kloss[35] record it from Tapli, Pakchan, and Tasan, Chumporn.

CRINIGER TEPHROGENYS TEPHROGENYS (Jardine and Selby)

Trichophorus tephrogenys JARDINE and SELBY, Illustrations of ornithology, vol. 3, pt. 9, pl. 127, 1833 (supposed to be India; type fixed by Hartert[36] as Malacca).

Three females, Kao Soi Dao, Trang, December 24, 28, 1933, January 1, 1934; two females and one unsexed, Kao Chong, Trang, August 27, September 8, 1933.

Dr. Abbott collected eight males and two females in Trang (Lay Song Hong, August 31 and September 5, 1896, January 1, 1897; Chong, January 23, 1897; Kao Nok Ram, 1,000 feet, January 4, 1899; Trang, January 3–February 7, 1897); one male and one female, Rumpin River, Pahang, May 23 and June 21, 1902. He gives the soft parts as: Iris brown, pale brown, reddish brown or brownish red; upper mandible dark brown or dull black, lower mandible leaden; feet pale brownish fleshy.

The range of this form is from southern Tenasserim south through Peninsular Siam to Singapore. Ogilvie-Grant[37] records it from Patani; Robinson and Kloss[38] from Ronpibun and Kao Ram, 1,200 feet, Nakon Sritamarat; later[39] they say it has often been confused with *ochraceus* in the past but that there is no occasion to do so at the present day if correctly named material is compared.

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[35] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 262, 1924.

[36] Nov. Zool., vol. 9, 1902, p. 558.

[37] Fasciculi Malayenses, pt. 3, p. 86, 1905.

[38] Journ. Federated Malay States Mus., vol. 11, p. 61, 1923.

[39] Journ. Nat Hist. Soc. Siam, vol. 5, p. 268, 1924.

C. t. tephrogenys has the breast and belly amber-yellow, the former with streaks of grayish white; under tail coverts mustard yellow. *C. ochraceus* has only the center of the breast light naples yellow; the sides light brownish olive; the under tail coverts cinnamon-buff. The latter is darker above and more brownish; the former more citrine.

CRINIGER TEPHROGENYS ANNAMENSIS Delacour and Jabouille

Criniger tephrogenys annamensis Delacour and Jabouille, Bull. Brit. Orn. Club, vol. 45, p. 32, 1924 (Laobao, Quangtri, Annam).

One male, Kao Lem, December 26, 1930. Wing, 108; culmen, 19 mm.

This male agrees fairly well with a specimen of this race from Daban, southern Annam, except that the breast and belly are somewhat deeper yellow. This form should not be confused with *C. t. henrici* of the north, which is a larger bird with the underparts averaging paler.

C. t. annamensis ranges from Annam to Laos, Cambodia, and eastern Siam.

This is the first and only record for Siam known to me.

CRINIGER TEPHROGENYS HENRICI Oustalet

Criniger henrici Oustalet, Bull. Mus. Hist. Nat. Paris, 1896, p. 185 (southern Yunnan and northern Tonkin).

One male and two females, Khun Tan, October 22, 1929, August 28 and September 5, 1930; one male, Huey Me Sae, December 24, 1932; one female, Khun Tan Mountains, 3,000 feet, May 10, 1933; one male, Doi Hua Mot, August 29, 1934.

The male from Huey Me Sae is a deeper yellow below than the Khun Tan male. The above series agrees with a small series from northern Tonkin.

The form ranges from the northeastern Shan States to southern Yunnan, Kwangsi, northern Siam, Laos, and Tonkin. Rothschild [40] says that *C. t. grandis* Baker is a synonym.

Gyldenstolpe [41] found it fairly common in bamboo and evergreen forests in northern Siam, and on his second expedition [42] he secured specimens at Khun Tan, Bang Hue Pong, and Doi Par Sakeng. De Schauensee [43] took a series at Chiengmai and Chiengdao.

CRINIGER OCHRACEUS OCHRACEUS Moore

Criniger ochraceus Moore, *in* Horsfield and Moore, A catalogue of the birds in the Museum of the Hon. East India Company, vol. 1, p. 252, 1854 (Tenasserim).

Criniger sordidus Richmond, Proc. U. S. Nat. Mus., vol. 22, p. 320, 1900 (Khaw Soi Dow, Trang, Peninsular Siam).

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[40] Nov. Zool., vol. 33, p. 306, 1926.

[41] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 24, 1913.

[42] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 67, 1916.

[43] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 201, 1934.

Criniger salangae SHARPE, A hand-list of the genera and species of birds, vol. 3, p. 316, 1901 (new name for *Criniger cabanisi* Muller, not of Sharpe).

One adult male and one immature male, Koh Chang, April 4, 1924 and March 10, 1930; one female, Koh Kut, May 22, 1929; six males and one female, Nong Khor, near Sriracha, September 22–26, 1925, March 24, 1926; one male, Kao Seming, Krat, October 12, 1928; two males, four females, and one unsexed, Kao Sabap, Chantabun, January 6–9, 1930, October 24–November 3, 1933; one male, Nong Yang, November 4, 1931; two males and one female, Hupbon, November 2–15, 1931.

The following specimens collected by Dr. W. L. Abbott are in the United States National Museum: Six males and three females, Trang (Kao Nom Plu, 1,000 feet, February 23, 1897; Kao Nok Ram, 2,000 feet, January 11–14, 1899; Kao Soi Dao, 3,000 feet, February 1, 1899; two with only "Trang," February 3, 1897, and January 28, 1899); two males, Pulo Langkawi, December 2 and 8, 1899; four males, Mergui Archipelago (St. Matthew Island, January 17, 1900, and December 24, 1903; Sullivan Island, February 2, 1900; Ross Island, March 5, 1900); three males and one female, southern Tenasserim (Victoria Point, January 3 and March 31, 1900; Tanjong Badak, January 7 and 10, 1900). He gives the soft parts as: Iris dark brown; bill leaden, dark above; feet fleshy brown.

It will be noted that Dr. Smith's series came from southeastern Siam, while Dr. Abbott's came from southern Tenasserim and Peninsular Siam. There appears to be little or no difference in color between the two series. The Peninsular series may average a trifle smaller.

De Schauensee [44] records the form from Chiengmai, and Deignan [45] records it from Doi Sutep, 3,000–3,500 feet, but this is more or less of a lowland form and Dr. Smith did not collect it in northern Siam. Count Gyldenstolpe [46] gives it as of general distribution throughout Siam proper.

The form is found from southern Tenasserim through Peninsular Siam to the Malay States, southern and southeastern Siam to Cochinchina, and south Annam.

In the mountains of the Malay States, from Perak to Negri Sembilan and Pahang, a larger darker form occurs, one so different, in fact, that it could very well rank as a species. It has been named *C. o. sacculatus* Robinson.[47] There is a possibility that it may be found in western Patani.

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[44] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 568, 1928.

[45] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 139, 1931.

[46] Ibis, 1920, p. 494.

[47] Ibis, 1915, p. 746.

CRINIGER BURMANICUS Oates

Criniger burmanicus OATES, The fauna of British India, Birds, vol. 1, p. 256, 1889 (Lower Burma).

Recorded by Chasen and Kloss,[49] from the Raheng District, from where it had previously been recorded by Barton.

One of the specimens recorded by Chasen and Kloss was later acquired by the United States National Museum through Dr. W. L. Abbott. It is not a form of *tephrogenys*, as they say, but a distinct species, related to *flaveolus* of the Himalayas and *bartelsi* of Java.

The Raheng specimen is a female and very peculiar. The crest is unusually long; the throat and jugulum are white; the ear coverts, lores, forehead, and pileum are white with a slight brownish wash, the white showing through; the crest feathers drab; lightly tipped with citrine; back citrine; upper tailcoverts a little lighter than the tail; tail brussels brown; breast, belly, and under wing coverts lemon-yellow; closed wing dresden brown with a yellowish wash; wing, 100 mm. There are some long hairlike feathers springing from the upper back, but specimens of *bartelsi* also have them.

A specimen of *flaveolus* resembles *burmanicus* in color, but crest is not so long and is of an entirely different color, dresden brown. *C. burmanicus* gives the impression of having an almost white head.

The range of *C. burmanicus* is the hills east of the Salwin from Yametkin to Moulmein in Tenasserim eastward into western Siam.

Lowe [50] reports finding it quite plentiful 30 miles east of Umpang.

IOLE OLIVACEA OLIVACEA Blyth

Iole olivacea BLYTH, Journ. Asiat. Soc. Bengal, vol. 13, p. 386, 1844 (Singapore).

One male, Tha Lo, Bandon, September 14, 1931.

Dr. W. L. Abbott collected the following: One male, Prahmon, Trang, April 8, 1896; three males and one female, Lay Song, Hong, Trang, September 17, November 12, December 23, 1896, and January 2, 1897. He gives the soft parts as: Iris grayish white; upper mandible dull black, lower mandible dull flesh; feet fleshy brown.

This form occurs from Singapore northward to Bandon, Peninsular Siam, and on some of the islands in the vicinity of the Straits Settlements.

IOLE OLIVACEA CINNAMOMEOVENTRIS Baker

Iole virescens cinnamomeoventris BAKER, Bull. Brit. Orn. Club. vol. 38, p. 16, 1917 (southern Tenasserim).

One male and one female, Sichol, Bandon, September 4, 5, 1929; one male, Khun Tan Mountains, 4,300 feet, May 12, 1933.

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[49] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 7, no. 3, 1928, p. 174.

[50] Ibis, 1933, p. 267.

Dr. W. L. Abbott collected three males and two females in the Mergui Archipelago in 1900 (Sullivan Island, February 4; Domel Island, February 23 and 27; Bentinck Island, March 12); two males, Trang (Chong, January 21, 1897; and Kao Nok Ram, January 4, 1899). He gives the soft parts as: Iris gray, dark gray, or grayish white; upper mandible horn brown, lower mandible pale leaden; feet pale fleshy brown.

This form ranges from northern Siam south through Peninsular Siam to Trang, where it occurs along with *olivacea*, and it is a question whether it is a form of that species, belongs to some other form group, or is only a winter visitor. It can be distinguished from *olivacea* by being more yellowish below, with the under tail coverts clay color instead of straw yellow; the upper parts are buffy olive rather than light brownish olive; the bill is smaller, culmen about 17 mm. Culmen in *olivacea*, 18–19.5 mm.

Robinson and Kloss [51] also found the two forms in Trang.

The specimen from the Khun Tan Mountains agrees better with this race than any other occurring in Siam. It is in fresh plumage; through some accident it has lost its tail and is acquiring a new one, which is about half grown. The only differences between it and Peninsular specimens are the slightly grayer throat and larger bill of the former. The culmen in the male from Khun Tan Mountains measurs 17.5 mm.

This extends the range of this form to the northward and into the territory occupied by *propinqua;* to the southward it occurs along with *olivacea* and brings up the question of whether these three forms should not be treated as species.

IOLE OLIVACEA PROPINQUA (Oustelet)

Criniger propinquus OUSTALET, Nouv. Arch. Mus. Paris, ser. 4, vol. 5, p. 76, 1903 (Pamon, Tonkin).

Criniger lonnbergi GYLDENSTOLPE, Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 24, 1913 (Bang Hue Hom, northern Siam).

One male, Doi Angka, December 3, 1928; one male and two females, Khun Tan, 4,000 feet, August 29 and September 7, 1930, February 25, 1932; one male, Huey Me Sae, December 24, 1932; one male, Sakeo, near Krabin, May 7, 1928; two females, Hupbon, November 3 and 5, 1931; four males and one female, Hin Lap, December 6 and 10, 1931; one male, Amphar Klong, Chantabun, January 4, 1930; two males and a female, Kao Seming, Krat, October 10, 15, 1928; three males, two females, and one unsexed, Kao Sabap, November 14–25, 1933.

This series seems to agree with Cochinchina specimens examined, which are few and in rather poor condition. They are somewhat darker above than Siamese specimens, but when better material is available from Tonkin, the Siamese and Tonkin races will likely be found to be the same.

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[51] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 266, 1924.

This form is quite different from *cinnamomeoventris*. The back is dull citrine rather than buffy olive; below the breast and belly are streaked with a clearer, deeper yellow; the under tail coverts are ochraceous-tawny rather than clay color.

This is so different from the *olivacea* group that I am inclined to believe it belongs to a different species.

This form ranges apparently from the Shan States, Burma, and Yunnan through northern Siam to Tonkin, Cochinchina, Laos, and Cambodia.

Deignan [52] found it to range on Doi Sutep from 2,000 to 3,500 feet; Aagaard [53] took a male on the same mountain at 4,600 feet. Dr. Smith's series illustrates the range of the species in Siam fairly well. In eastern and southeastern Siam it probably occurs at lower elevations.

TRICHOLESTES CRINIGER CRINIGER (Blyth)

Brachypodius (?) *criniger* Blyth (A. Hay MS.), Journ. Asiat. Soc. Bengal, vol. 14, p. 577, 1845 (Malacca).

One female, Sichol, Bandon, September 1, 1929; three males and two females, Kao Soi Dao, Trang, December 22–30, 1933.

Dr. W. L. Abbott collected two males and one female at Lay Song Hong, Trang, August 15 and September 28 and December 24, 1896. He gives the bill as leaden, black along the culmen; feet pale greenish, fleshy or pale fleshy brown, claws horn brown.

This form ranges from southern Tenasserim south through Peninsular Siam to Singapore and some of the islands of the China Sea as far as the Natunas. In Peninsular Siam it has been recorded from as far north as Tapli, Pakchan, and Tasan, Chumporn, by Robinson and Kloss.[54] Closely related forms occur in Sumatra and Borneo.

This genus is remarkable for the long hairlike feathers springing from the center of the upper back just below the nape. The feet seem to be very weak for a bird of its size.

Apparently it is rare in the northern part of its range, becoming commoner in the south.

ALOPHOIXUS PHAEOCEPHALUS (Hartlaub)

Ixos (*Trichixos*) *phaeocephalus* Hartlaub, Rev. Zool., 1844, p. 401 (Malacca).

One female, Ban Huey Ta, Kao Luang, Nakon Sritamarat, July 12, 1928; one female, Sichol, Bandon, May 26, 1930.

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[52] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 140, 1931.

[53] Ibid., p. 242.

[54] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 272, 1924.

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula: three males and four females, Trang (Prahmon, April 8 and 10, 1896; Lay Song Hong, December 21, 1896, and January 1, 1897; Trang, January 27, 1897; Kao Soi Dao, 1,000 feet February 11, 1899); two males and one female, Trengganu (Tanjong Laboha, September 29, 1900, and Tanjong Dungun, September 21, 1900); one male, Endau River, east coast of Johore, June 26, 1901; one male, Rumpin River, Pahang, June 20, 1902. He gives the soft parts as: Iris clear brown, dark brown, or dark red; bill blackish, lower mandible leaden; feet pale fleshy brown or dull orange.

The species ranges from southern Tenasserim south through Peninsular Siam to Singapore, Sumatra, Banka, and the Natuna Islands.

Robinson and Kloss [55] record specimens from Tasan, Chumporn, and this appears to be the northern limit in Peninsular Siam; they have also recorded [56] it from Kao Ram, 1,200 feet, Nakon Sritamarat. It is uncommon in the north but commoner in the southern part of its range. A closely related form is found in Borneo.

MICROSCELIS PSAROIDES CONCOLOR (Blyth)

Hypsipetes concolor Blyth, Journ. Asiat. Soc. Bengal, vol. 18, p. 816, 1849 (Tenasserim).

Two males and two females, Doi Angka, 6,000–8,000 feet, December 4–6, 1928; seven males and eight females, Khun Tan, 3,000–4,300 feet, October 23, 1929, February 16-March 1, 1932, May 10, and 12, 1933; four males and five females, Doi Nangka, November 18, 20, 1930, May 1–5, 1931; two males, Doi Hua Mot, August 26, 29, 1934; one male, Doi Sutep, February 3, 1932.

This form is very different from *psaroides* from the Himalayas but is linked to it evidently by *nigrescens* of Assam.

M. p. concolor has a wide range occurring from Tenasserim, eastern Burma, Yunnan, and northern Siam, southeastward to Laos, Tonkin, and Annam.

Specimens from Yunnan seem to average slightly darker above, while the few examined from southern Annam are on the whole somewhat lighter, though individual specimens can be picked out of the fine Siamese series that match the southern Annam birds, yet there are none so dark as the darkest Yunnan specimen. These are very variable birds, and it is unsafe to set up races on the strength of a few specimens.

One of the females from Doi Nangka, May 2, is immature and quite different from an immature female previously described from Yunnan.[57]

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[55] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 272, 1924.

[56] Journ. Federated Malay States Mus., vol. 11, p. 61, 1923.

[57] Proc. U. S. Nat. Mus., vol. 70, art. 5, p. 22, 1926.

It is a younger bird and may be described as follows: Above fuscous-black mixed with dark mouse gray, becoming a much lighter gray on the rump; chin and cheeks deep quaker drab with some fuscous feathers mixed in; throat whitish the feathers tipped with drab; remaining underparts neutral gray, the chest with some scattered fuscous feathers, the belly with some white down the center forming a line; wings fuscous-black, the feathers bordered narrowly on the outer edges with light cinnamon-drab; tail above dark quaker drab.

Apparently this is not an uncommon bird in northern Siam. It has been taken previously on Doi Sutep and Khun Tan. On his third expedition de Schauensee [58] secured a series at Chiengmai, Chiengdao, and Khun Tan; Lowe [59] reports it from 28 miles east of Um Pang.

CERASOPHILA THOMPSONI Bingham

Cerasophila thompsoni Bingham, Ann. Mag. Nat. Hist., ser. 7, vol. 5, p. 358, 1900 (Loi San Pa, 6,500 feet, southern Shan States); Ibis, 1903, p. 592, pl. 12.

One immature male, Doi Nangka, April 26, 1931; one immature male, Doi Hua Mot, August 22, 1934.

The adult is a gray bulbul with the head and neck white; the under tail coverts chestnut; the bill and feet red in life; wing about 88 mm. Superficially it resembles another bulbul, *M. leucocephalus*, also reported from the mountains of Siam and also gray in one of its plumages, with a white head and neck and red bill. The latter is a much larger bird; wing about 115 mm; without chestnut under tail coverts.

C. thompsoni is rare in collections. So far the immature is believed to be undescribed. The description of the above immature male from Doi Nangka is as follows: Mouse gray, lighter below, head and neck white, two bands of deep mouse gray from the nostrils over the head to the nape; another narrow gray stripe on each side from the lores over the eye separated from the gray band from the nostril by a narrow white line; rictal streak gray; the flight feathers washed outwardly along the outer web with dark olive-buff; belly washed with olive-buff; under tail coverts avellaneous.

The second male is similar, but older, the gray on the head is more irregular; some of the primaries have been replaced by new and dark brownish black feathers without the olive-buff edging.

De Schauensee [60] took a male on Doi Sutep, 5,500 feet, December 30, 1928. Deignan [61] collected one of a pair in March 1931 at the same place. Later [62] he took two at 3,800 feet on Doi Sutep, May 13 and 14, 1935; and one on Doi Angka, 5,000 feet, September 8, 1935.

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[58] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 201, 1934.

[59] Ibis, 1933, p. 268.

[60] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 539, 1930.

[61] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 140, 1931.

[62] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, pp. 65, 109, 1935–36.

The species was described from the southern Shan States, Burma. The range has since been expanded to east central Burma and northern Siam. It seems to be a shy mountain species.

IXOS HILDEBRANDI (Hume)

Hemixus hildebrandi HUME, Stray Feathers, vol. 2, p. 508, 1874 (Youngzaleen River, Salween District, Tenasserim).

One male, Kao Lem, December 26, 1930; one male, Pang Meton, Doi Nangka, May 2, 1931; one male, Khun Tan, 4,000 feet, February 15, 1932; one male, Doi Hua Mot, August 13, 1934.

The United States National Museum has a pair from Phong Saly, Laos, that seem to agree with the above Siamese birds.

Ixos hildebrandi ranges from the Salween and Karen Hills north into northern Siam and eastward into Laos.

Williamson [63] records it from Muang Wang, northern Siam. De Schauensee [64] collected a series at Chiengdao and says it appeared very irregularly but that when it did occur it was in large flocks. Deignan [65] recorded it from Doi Sutep, 2,700–3,500 feet, under the name *Pycnonotus hainanus*.

Ixos flavala of the Himalayas has the pileum gray, while in *hildebrandi* it is black. *Ixos davisoni* has the pileum brown and the back a lighter brown. *I. flavala* and *I. hildebrandi* have gray backs. So far as known, the three do not intergrade and are sufficiently distinct to stand as species.

IXOS MACCLELLANDI TICKELLI (Blyth)

Hypsipetes tickelli BLYTH, Journ. Asiat. Soc. Bengal, vol. 24, p. 275, 1855 (interior of Tenasserim).

Two males, Doi Angka, 7,000 feet, December 6, 1928; one male, Khun Tan, August 24, 1930; two males, Doi Hua Mot, August 23, September 1, 1934.

De Schauensee [66] found it common on Doi Sutep, 4,500 feet; Deignan [67] gives it from the same mountain from 2,700 to 5,500 feet. Aagaard also took it there at 4,600 to 5,500 feet; [68] Chasen and Kloss also record it from the Raheng District.[69] De Schauensee [70] on his third expedition took a series at Chiengmai and Chiengdao.

The form occurs from Karenni and the hills of east-central Burma to Muleyit, Tenasserim, and western and northern Siam.

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[63] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 19, 1918.

[64] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 202, 1934.

[65] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 141, 1931.

[66] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 539, 1930.

[67] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 140, 1931.

[68] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 242, 1932.

[69] Journ. Siam Soc. Nat. Hist. Suppl. vol. 7, p. 174, 1928.

[70] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 202, 1934.

IXOS CANESCENS Riley

Ixos canescens Riley, Proc. Biol. Soc. Washington, vol. 46, p. 155, 1933 (Kao Kuap, Krat, southeastern Siam).

One male and one female, Kao Kuap, Krat, December 24 and 26, 1929.

The form was described as similar to *Ixos griseiventer* (Robinson and Kloss) of southern Annam, but the pileum a lighter brown with the shaft streaks reduced and less conspicuous; the back much darker citrine; the tail above dusky toward the tip not citrine for its whole length; tail below dusky instead of citrine; under tail coverts darker; the chest a more brownish gray and the shaft streaks much reduced in width and cartridge buff instead of grayish white. Wing, 94; tail, 91.5; culmen, 20.5; tarsus, 18; middle toe with claw, 16.5 mm. This is a description of the male.

The female measures: Wing, 92; tail, 86; culmen, 20; tarsus, 18; middle toe with claw, 16.5 mm.

Ixos griseiventer and *Ixos canescens* do not belong to the same form group as *tickelli* but are distinct species.

Dr. Smith took only two specimens of *canescens*. Its range is probably confined to southeastern Siam and northwestern Cambodia.

IXOS MALACCENSIS MALACCENSIS (Blyth)

Hypsipetes malaccensis Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 574, 1845 (Malacca).

One not sexed, Kao Soi Dao, Trang, January 16, 1934.

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula: Six males and two females, Trang (Prahmon, April 9, 1896; Lay Song Hong, September 8 and November 15, 1896; near Chong, January 24, 1897; Kao Soi Dao, 2,000 feet, February 12, 1899, and just "Trang", February 3, 1897, January 5 and 24, 1899); one male, the Dindings, Straits of Malacca, April 13, 1900; one male, Rumpin River, Pahang, June 7, 1902. He describes the soft parts as: Iris pale brown; bill brownish black, pale near base of lower mandible; feet fleshy brown, claws horn brown.

The form ranges from the Straits Settlements north through Peninsular Siam to southern Tenasserim.

Robinson and Kloss [71] record it from Peninsular Siam as far north as Tasan, Chumporn; Robinson [72] records it from Pulo Telibun, Trang; and Kao Nawng, Bandon [73]; Robinson and Kloss [74] from Kao Nok Ram, 1,200 feet, Nakon Sritamarat; Baker [75] from Tung Song.

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[71] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 265, 1924.

[72] Journ. Federated Malay States Mus., vol. 7, p. 173, 1917.

[73] Journ. Federated Malay States Mus., vol. 5, p. 102, 1915.

[74] Journ. Federated Malay States Mus., vol. 11, p. 61, 1923.

[75] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 196, 1919.

IXOS CINEREUS CINEREUS (Blyth)

Iole cinerea BLYTH, Journ. Asiat. Soc. Bengal, vol. 14, p. 573, 1845 (Malacca).

One adult unsexed, Kao Luang, 3,000 feet, Nakon Sritamarat, July 14, 1928.

Dr. W. L. Abbott collected five males and three females in Trang (Kao Nom Plu, 2,000–3,000 feet, February 20–26, 1897; Kao Soi Dao, 2,000 feet, February 11, 1899; and Trang, January 21 and 28, 1899). He gives the soft parts as: Iris dark red (male) or dark brown (female); bill black; feet dark fleshy brown.

This form occurs from Nakon Sritamarat south to Johore and Sumatra. Ogilvie-Grant[76] records it from Patani; Baker[77] from Tung Song; Robinson and Kloss from Trang[78] and Kao Nok Ram and Kao Luang, 2,000 feet, Nakon Sritamarat.[79]

ALCURUS STRIATUS (Blyth)

Trichophorus striatus BLYTH, Journ. Asiat. Soc. Bengal, vol. 11, p. 184, 1842 (Himalayas, probably Darjeeling).

One male, Doi Angka, 8,000 feet, December 6, 1928; one male and one female, Doi Nangka, April 27 and November 10, 1930; one female, Pang Meton (Doi Nangka), May 1, 1931; one male, Doi Hua Mot, September 1, 1934.

Only two old unsexed specimens have been available for comparison, one from Nepal and one from Darjeeling. From these the Siamese specimens differ in the color of the crest. In the Indian birds it is olive-brown, while in those from Siam it is buffy olive. In the Siamese birds the lower back, rump, and wings are more greenish yellow and the edges of the feathers of the chest are grayish rather than brownish. There are other slight differences, but whether these would hold in a larger and better series of the Indian bird is problematical.

Deignan[80] reports it uncommon on Doi Sutep at 5,500 feet, and later Aagaard secured it at the same place and elevation.[81] De Schauensee reports it an uncommon bird in northern Siam, inhabiting the summits of the mountains.[82]

The range of the species is from the Himalayas of Nepal to Assam and south through Burma to Manipur, Tenasserim, northern Siam, Yunnan, and northern Laos and northwest Tonkin. It is a mountain bird of high elevations, not descending below 4,000 feet in India even at the cold season.

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[76] Fasciculi Malayenses, pt. 3, p. 88, 1905.

[77] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 191, 1919.

[78] Ibis, 1911, p. 56.

[79] Journ. Federated Malay States Mus., vol. 11, p. 61, 1923.

[80] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 140, 1931.

[81] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 243, 1932.

[82] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 202, 1934.

MOLPASTES CAFER KLOSSI Gyldenstolpe

Molpastes atricapillus klossi GLYDENSTOLPE, Bull. Brit. Orn. Club, vol. 41, p. 12, 1920 (Koon Tan, northern Siam).

One female, Chiengmai, November 26, 1928; one male, Doi Angka, 3,000 feet, December 7, 1928; one male, Khun Tan Mountains, 2,000 feet, November 2, 1928; one male, one female, and one unsexed, Khun Tan, October 20, 1929, and September 3, 1930; one female, Mae Hong Sorn, January 7, 1933; one male and one female, Pak Chong, February 7, 1925, and April 29, 1926; one female, Nong Mong, Muang Krabin, August 21, 1925; one female, Bua Yai, February 15, 1929.

The small series from northern Siam compared with an equally small series from China (*chrysorrhoides*) averages grayer, less brown above, and the tails above are a deeper less brownish black. The Chinese form is somewhat larger also.

The four birds from eastern Siam are brown above like *chrysorrhoides* but smaller even than northern Siamese specimens. They are intermediate in size but come nearer *klossi*, and so are placed here for the present.

Two males, one female, and four unsexed from China measure: Wing, 91–102 (96.2); culmen, 17–18 (17.4) mm. Three males and three females, northern Siam: Wing, 88–95 (91.3); culmen, 15.5–17 (16.1) mm. One male and three females, eastern and southeastern Siam: Wing, 84–90 (86.5); culmen, 15–17.5 (16.4) mm.

This form evidently ranges from northern Siam to eastern, southeastern, and western Siam and eastern Tenasserim.

De Schauensee [83] reports it from Chiengmai, Doi Sutep, 4,500 feet, Chiengrai, and Chiengsen. He says in northern Siam it is a rare and local bulbul; on his third expedition [84] he secured specimens at Nakon Nayok, Metang, Khun Tan, Chiengdao, Sriracha, and Chiengmai; Chasen and Kloss [85] record it from the Raheng district of western Siam, and three specimens from this collection are now in the United States National Museum. Robinson and Kloss [86] say that W. J. F. Williamson obtained a series from Sriracha on the eastern side of the Inner Gulf of Siam.

XANTHIXUS FLAVESCENS VIVIDUS Baker

Xanthiscus flavescens vivida BAKER, Bull. Brit. Orn. Club, vol. 38, p. 16, 1917 (Salwin District, Tenasserim).

Three males and three females, Khun Tan, 4,000 feet, November 20, 1928, February 22–March 4, 1932; one male, Doi Angka, December 3, 1928; one male and one female, Doi Nangka, April 26, 27, 1931; three males, Doi Hua Mot, August 24, 29, 1934; one male and one female, Ban Ta Pai, December 23, 1932.

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[83] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 540, 1930.

[84] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 205, 1934.

[85] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 175, 1928.

[86] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 277, 1924.

Kloss,[87] trusting to memory, thinks *vividus* Baker is a synonym of *flavescens* Blyth. Only one specimen of *X. f. flavescens* Blyth from Assam and one of *X. f. sordidus* Robinson and Kloss from southern Annam have been examined, and they are both quite distinct from the northern Siam form. Under the circumstances it is advisable to leave the latter where previous authors have placed it for the present, under Stuart Baker's name. *X. f. vividus* is a brighter, more yellowish bird on the breast and belly.

Two of the males from Doi Hua Mot are immature, but have nearly acquired the adult plumage; the squamate feathers are coming in on the forehead and crown.

The form ranges from the Kachin Hills, Shan States, and southeastern Burma to northern Siam.

Williamson [88] records it from Doi Nga Chang, Lampang, and de Schauensee [89] secured it on Doi Sutep and later at Chiengdao and Khun Tan.

OTOCOMPSA JOCOSA ERYTHROTIS (Bonaparte)

Ixos erythrotis BONAPARTE, Conspectus generum avium, vol. 1, p. 265, 1850 (Java; error; probably Malacca).

Two males and four females, Bangnara, Patani, May 9 and 19, 1924, July 4–21, 1926; five males and four females, Bukit, Patani, January 21–27, 1931; two females, Yala, Patani, February 1–2, 1931; two males, Patalung, July 9, 1929; one male, Pak Bhayoon, July 11, 1929; one female, Haad Yai, July 12, 1929; one male and one female, Nakon Sritamarat, September 26–27, 1926; one male, Kao Luang, Nakon Sritamarat, July 21, 1928; one male, Ban Ta Yai, July 9, 1928; three males and one female, Bung Borapet, June 19 and 28, 1932, March 24, 1933; one male, Petchabun, February 14, 1934; two males and two females, Nan, April 14, 15, 1930; four males, four females, and one unsexed, Ban Nam Kien, Nan, April 20–22, 1930; one female, Lampang, November 17, 1928; one male and one female, Chiengmai, November 24, 26, 1928; one male, Pang Meton (Doi Nangka), May 2, 1931; one female, Doi Hua Mot, August 29, 1934; four males, Prae, April 10, 11, 1930; two males, Muang Pai, December 28, 1932.

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula: Five males and three females, Trang (Prahmon, April 1, 1896; Lay Song Hong, December 10, 1896; Chong, January 23, 1897;

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[87] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 243, 1932.

[88] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 19, 1918.

[89] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 539, 1930; vol. 86, p. 202, 1934.

near Kao Nom Plu, February 19, 1897; Trang, February 11 and March 7, 1897); and one female, Victoria Point, Tenasserim, January 3, 1900. He also took a nest and three eggs at Trang, March 7, 1897. He describes the iris as dark brown, bill and feet black.

No constant differences in color can be detected between specimens from Peninsular Siam and those from northern Siam. Sex for sex, the birds increase in size from the south toward the north, but the differences are slight so far as Siam is concerned. Specimens from French Indo-China seem to agree with Siamese birds in size and color.

Ten males from Peninsular Siam measure: Wing, 78–86 (82.3); tail, 78–87 (82.3); culmen, 15–16.5 (15.9) mm. Ten males from northern Siam: Wing, 79–89 (83.6); tail, 80–90 (83.4); culmen, 15–17 (16.1) mm. Seven males from Laos and Tonkin: Wing, 83–86 (84.9); tail, 82–90 (85.9); culmen, 15–16.5 (15.7) mm.

The typical race, *O. j. jocosa*, comes from China and is a larger form, of which no specimens have been examined. La Touche[90] gives the measurements as follows: Wing, 92; tail, 91; culmen, 15 mm. Two males of *O. j. emeria* from the Salwin River, western Yunnan, in the United States National Museum measure: Wing, 92–95; tail, 90–97; culmen, 16.5–17 mm.

In the above series there are three immature specimens (one male and two females). One female was collected at Haad Yai, July 12, one female at Doi Hua Mot, August 29, and the male at Ban Ta Yai, July 9. All three are of nearly adult size, but the red has not appeared under the eye, and the under tail coverts in the two females are light salmon-orange; in the male a few scarlet under tail coverts are coming in. The pileum is dark brown instead of black.

The range of *O. j. erythrotis* extends from Singapore northward through Peninsular Siam to Tenasserim and northern Siam and eastward to Laos, Tonkin, South Annam, and Cochinchina. Apparently it is common all over Siam.

Herbert[91] found it breeding at Paknampo and took one clutch of two eggs, but he gives no data.

OTOCOMPSA FLAVIVENTRIS FLAVIVENTRIS (Tickell)

Vanga flaviventris Tickell, Journ. Asiat. Soc. Bengal, vol. 2, p. 573, 1833 (Dampara and Dholbhum, Bengal).

Six males, Khun Tan, 4,000 feet, November 23, 1928; October 18–28, 1929, September 7, 1930; two males, Mekhan, February 6 and 8, 1932; one male, Muang Pai, December 28, 1932. The wings of nine males measure 84–89 (85.4) mm.

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[90] A handbook of the birds of eastern China, vol. 1, pt. 1, p. 95, 1925.

[91] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 96, 1923.

All the above localities are in northern Siam, and it is my belief that so far as Siam is concerned this form is confined to that part of the country, probably extending southward in western Siam.

De Schauensee[92] records it from Chiengmai, Doi Sutep, 2,000 feet, Chiengrai, and Chiengsen, all localities in the north. Deignan[93] says that it ascends Doi Sutep to 3,500 feet and in cold weather comes down on to the plateau; de Schauensee[94] on his third expedition adds the locality Chiengdao.

The range of the form is the Himalayas from the Sutlej Valley to east Assam and south to eastern Bengal, Burma, northern Siam, Yunnan, Tonkin, and Cochinchina.

OTOCOMPSA FLAVIVENTRIS MINOR Kloss

Otocompsa flaviventris minor Kloss, Ibis, 1918, p. 200 (Koh Lak, southwestern Siam).

One male, Sriracha, May 24, 1925; two males, Nong Khor, near Sriracha, September 26 and October 1, 1925; one male, Huey Yang, Sriracha, August 3, 1932; two males, Kao Sabap, Chantabun, January 9, 1930, October 28, 1933; two males and one female, Kao Seming, Krat, October 9–11, 1928; one male, Lem Ngob, August 24, 1931; three males, Nong Yang, November 7, 1931; six males and one unsexed, Koh Chang, April 2–5, 1924, January 9, 12, 1926, March 11, 1930; one female, Koh Kut, May 22, 1929; one male, Muang Kanburi, April 15, 1928; one female, Tha Lo, Bandon, September 27, 1931.

Dr. W. L. Abbott collected four males and two females in Trang (Lay Song Hong, November 30, 1896; Chong, January 21, 1897; Trang, February 2, 12, 1897; January 28, 1899); and one male, Victoria Point, Tenasserim, March 30, 1900. He gives the color of the soft parts as: Iris pale yellow; bill black; feet dark leaden, black, or dark brown.

This form is not a well-marked one. It differs only in size from *O. f. flaviventris*, and even this difference is not great and overlaps.

The wings of nine males from northern Siam measure 84–89 (85.4) mm; of 21 from southeastern and Peninsular Siam, 76–85 (81.7) mm.

The range of the form extends from southeastern Siam and probably Cambodia westward through southern Siam to southern Tenasserim and southward through Peninsular Siam to the Malay States.

There has been a good deal of controversy over this form, some authors believing that it is only a black-throated race of *O. johnsoni*, but over the range given above no red-throated or partially red-throated specimens are found, so far as known, and it is my belief that the latter is a distinct species confined to the eastern Siamese plain.

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[92] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 540, 1930.

[93] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 140, 1931.

[94] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 203, 1934.

OTOCOMPSA JOHNSONI (Gyldenstolpe)

Rubigula johnsoni GYLDENSTOLPE, Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 25, pl. 1, fig. 3, 1913 (Sakerat, Korat Plateau, eastern Siam).

Two females, Knong Phra, near Pak Chong, February 25, 1924, April 16, 1929; four males and eight females, Pak Chong, May 9, 18, 1925, November 19, 1925, May 5, 10, 1926, November 19–29, 1929; one male, Pang Sok, August 21, 1926; one unsexed, Tha Chong, March 14, 1929; two males and two females, Lat Bua Kao, July 30–August 6, 1929; three males, Hin Lap, December 6, 1931, October 2, 1932.

All these localities are in eastern Siam. One of the Pak Chong males taken on November 27 has a black throat like *flaviventris* but is acquiring a few red feathers on the lower throat. A male taken by C. Boden Kloss at Lat Bua Kao, October 16, has a few red barbs to some of the feathers of the lower throat. A young female taken by Dr. Smith at the same locality has the throat yellow and the red coming in without the intervening black stage. This does not agree with Kloss's remarks.[95] It seems possible that the black-throated specimens showing a few red barbs to the feathers are not really hybrids but immature birds acquiring the adult plumage.

So far as known, *O. johnsoni* is confined to eastern Siam. Kloss [96] thinks it is confined to the Korat Plateau and later [97] defines the range more precisely as east of the Menam Chao Phaya and north of the latitude of Bangkok.

It resembles *O. dispar* of Java in having a red throat, but is a duller colored bird.

Gyldenstolpe's [98] inclusion of Nakon Sritamarat in the range of this species is undoubtedly erroneous and that of de Schauensee [99] for the same locality also; the latter states that it has a black throat. His specimens from Kengkoi and Nakon Nayok are evidently correct, as they have red throats, but they are in the range of the species.

It is strange that, if red-throated specimens ever occur in southeastern, southern, and Peninsular Siam, none appears in the large series of *O. j. minor*, consisting of nearly 40 specimens, in the United States National Museum.

EUPTILOSUS EUTILOTUS (Jardine and Selby)

Brachypus eutilotus JARDINE and SELBY, Illustrations of ornithology, new ser., no. 1, pl. 3 and text, 1837 (Singapore).

Dr. W. L. Abbott took one unsexed specimen, Lay Song Hong, Trang, September 28, 1896; one male, Dungun River, Trengganu,

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[95] Ibis, 1918, p. 202.

[96] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 450, 1919.

[97] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 52, 1921.

[98] Ibis, 1920, p. 492.

[99] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 203, 1934.

September 23, 1900; two males and one unsexed, Rumpin River, Pahang, May 30, and June 21, 1902. He gives the soft parts as: Iris deep red; bill black; feet dull brownish leaden, toes blackish.

Williamson[1] has recorded it from Bangnara, Patani; Robinson and Kloss[2] say that in the Malay Peninsula it always seems to be a somewhat rare and local species; de Schauensee[3] records a pair from Nakon Sritamarat.

It ranges from southern Tenasserim south through Peninsular Siam to Singapore; it has also been recorded from Sumatra and Borneo, but I am not satisfied that specimens from these two islands are the same as the mainland bird.

A pair from Sumatra and an unsexed one from Billiton seem to be a little darker above than mainland specimens; they are very close, however. Six males and one female from Borneo are lighter above than the mainland specimens and the cheeks are lighter also.

The wings of six males from Borneo measure 87–100 (94.4) mm; two males from the Malay States and one male from Sumatra, 91–93.5 (92.5) mm.

TRACHYCOMUS ZEYLANICUS (Gmelin)

Sturnus zeylanicus Gmelin, Systema naturae, vol. 1, pt. 2, p. 804, 1789 (Ceylon, error; Java).

One male, Ban Kiriwong, July 10, 1928.

Dr. W. L. Abbott collected the following: Three males and one female, Trang (Prahmon, April 2, 5, 1896; Kantany, January 16, 1897); one male, Dungun River, Trengganu, September 19, 1900; one male, Victoria Point, Tenasserim, March 12, 1904; one male, Bok Pyin, Tenasserim, February 14, 1900. He gives the soft parts as: Iris pale brown, orange-brown, red-brown, or brownish red; bill black; feet blackish leaden, dull black, or brownish black.

The range of the species is Tenasserim south through Peninsular Siam to the Malay States, Sumatra, Java, and Borneo.

The island material at my disposal is too scanty to bring out any differences, if they exist, between the birds of the various regions.

SQUAMATORNIS SQUAMATA WEBBERI (Hume)

Ixidia webberi Hume, Stray Feathers, vol. 8, p. 40, 1879 (Tonka Territories).

Dr. W. L. Abbott collected one male and three females in Trang, January 20 and 21, 1899. He gives the soft parts as: Iris orange-red; bill black; feet dark leaden.

The form ranges from Tenasserim through Peninsular Siam to the Malay States and Sumatra.

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[1] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 19, 1918.

[2] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 267, 1924.

[3] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 204, 1934.

Robinson and Kloss[4] state that it is fairly common in Trang; they also record it from Kao Ram, 1,200 feet, and Kao Luang, 2,000 feet, Nakon Sritamarat;[5] Baker[6] gives it for Tung Song.

S. s. squamata (Temminck) is confined to Java.

PYCNONOTUS GOIAVIER PERSONATA (Hume)

Otocompsa personata Hume, Stray Feathers, vol. 1, p. 407, 1873 (Acheen, Sumatra).

One male, Bangnara, Patani, May 22, 1925; one female, Yala, Patani, February 1, 1931; one male and one female, Pak, Bhayoon, July 4, 1929; two males, Singora, July 2, 1929; one male and one female, Patalung, July 9, 5, 1929; three males, Koh Chang, April 1 and 2, 1924; one female, Kao Seming, Krat, October 18, 1928; three males and three females, Chantabun, May 28, 1929, March 15, 1930; four males and seven females, Lem Sing, Chantabun, June 10, 13, 1926, June 27, 1931.

Dr. W. L. Abbott collected the following: Five males and two females, Trang (Prahmon, February 26, and April 2, 1896; Tyching April 23, 1896; Lay Song Hong, December 10, 15, 1896; Trang, February 15, 1897; near base of Kao Nom Plu, March 10, 1897); one male, Singapore Island, May 15, 1899; one male and one female, Tanjong Kalong, Singapore, October 15, 19, 1899; one male and one female, the Dindings, Straits of Malacca, April 12, 1900; one male, and one female, Tanjong Laboha, Trengganu, September 30, 1900; one female, mouth of the Rumpin River, Pahang, May 20, 1902; one male and one female, Tenasserim (Bok Pyin, February 12, 1900; Tanjong Badak, March 15, 1900). He gives the soft parts as: Iris dark brown; bill and feet black.

The form ranges from Sumatra north through the Malay Peninsula to southern Tenasserim, southern Siam and eastward to southeastern Siam, Cambodia, and Cochinchina.

Robinson[7] records it from Koh Samui; Kloss[8] from Tachin; Herbert[9] found it not common at Bangkok and met with it only at the Ditches, Klong Toi, and Samkok; only one set of eggs was taken, which is described.

This form has been usually recorded as *P. g. analis*, but that form is probably confined to Java.

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[4] Ibis, 1911, p. 59.

[5] Journ. Federated Malay States Mus., vol. 11, p. 61, 1923.

[6] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 196, 1919.

[7] Journ. Federated Malay States Mus., vol. 5, p. 149, 1915.

[8] Ibis, 1918, p. 199.

[9] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 96, 1923.

PYCNONOTUS AURIGASTER GERMAINI (Oustalet)

Ixus germaini OUSTALET, Bull. Soc. Philom. Paris, ser. 7, vol. 2, p. 54, 1878 (Saigon, Cochinchina).

One male, Chantabun, May 28, 1929.

Robinson and Kloss [10] under *Molpastes a. thais* say this form has been met with at Kao Sabap, Chantabun. *M. a. germaini* may be distinguished from *thais* by the narrower lighter tips to the outer tail feathers, which are light drab rather than white and the top of the head brownish rather than black.

De Schauensee [11] records a pair from Chantabun as *P. a. thais* that I think must belong to this form. Gyldenstolpe [12] reports it from Sakerat, Korat Plain.

The form ranges from southeastern Siam to Cambodia, Cochinchina, Laos, and Annam.

PYCNONOTUS FINLAYSONI FINLAYSONI Strickland

Pycnonotus finlaysoni STRICKLAND, Ann. Mag. Nat. Hist., ser. 1, vol. 13, p. 411, 1844 (Malacca, as fixed by Hartert [13]).

One immature male, Patalung, July 7, 1929; one female, Ban Hoi Tah, Kao Luang, Nakon Sritamarat, July 18, 1928; one female, Wat Kiriwong, July 26, 1928; one male and one female, Koh Pangan (Pennan), Bandon, July 24, 25, 1931; one female, Tha Lo, Bandon, September 28, 1931; two males and one female, Pak Chong, February 8, May 17, and November 19, 1925; one male, Lam Klong Lang, Pak Chong, June 11, 1925; one female, Lem Sing, Chantabun, June 8, 1926; one male, Ban Ta Yai, July 8, 1928; one female, Nong Khor, near Sriracha, September 30, 1925; one female, Ban Sadet, Sriracha, June 1, 1925; two males and one female, Hupbon, May 25, 1925, November 3, 15, 1931; one male, Sakeo, near Krabin, May 7, 1928; two males, Lat Bua Kao, August 7, 1929; one male and one female, Aranya, July 14, 1930.

Dr. W. L. Abbott collected the following in the Malay Peninsula: Five males and four females, Trang (Lay Song Hong, December 6–14, 1896; Trang, January 6-February 13, 1897, December 31, 1898; near base of Kao Nom Plu, March 9, 1897); one female, Pulo Langkawi, December 9, 1899; two males and two females, Tenasserim (Muliwun, March 25, 1900; Victoria Point, March 30, 1900; Pakchan River, December 19, 1900); five males and two females, Mergui Archipelago (Loughborough Island, January 23–25, 1900; Sullivan Island, January 31, 1900; Bentinck Island, March 8, 11, 1900). He describes the soft parts as: Bill dull black; feet blackish.

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[10] Journ. Nat. Hist. Soc. Siam, vol. 5, no. 3, p. 278, 1924.

[11] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 206, 1934.

[12] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 26, 1913.

[13] Nov. Zool., vol. 9, p 560, 1902.

Dr. Abbott also took a nest and two eggs with parent bird near base of Kao Nom Plu, March 9, 1897.

The series collected by Dr. Abbott in Trang are browner, less gray on the chest than specimens from eastern and southeastern Siam and French Indo-China. The latter may belong to a different form. The specimens from Tenasserim appear to be somewhat intermediate.

This form is apparently common all over Peninsular, southern, eastern, and southeastern Siam. It occurs also on many of the islands off the coast. It ranges from the Malay States north through Peninsular Siam to central, eastern, and southeastern Siam, and east to southern Indo-China.

Robinson and Kloss [14] have recorded it from Trang, Pulo Terutau, and Pulo Langkawi; Robinson [15] from Koh Samui and Koh Pennan; Gyldenstolpe [16] from Bang Hue Hom, northern Siam; Robinson and Kloss [17] from Lat Bua Kao, Satahip, and Koh Mesan. Deignan [18] states that it is not common in northern Siam and confined to districts watered by streams flowing into the Mekong. It has been recorded from many additional localities, but the above are sufficient to indicate its range. Count Gyldenstolpe's record from Bang Hue Hom is the only northern one I have seen, however.

PYCNONOTUS CYANIVENTRIS CYANIVENTRIS Blyth

Pycnonotus cyaniventris BLYTH, Journ. Asiat. Soc. Bengal, vol. 11, p. 792, 1842 (Singapore).

Dr. W. L. Abbott took a male at Lay Song Hong, Trang, August 21, 1896. He gives the bill as black and the feet dark leaden.

Robinson and Kloss [19] record it from Tasan, Chumporn, and say that they took specimens in Trang in October 1909, but they failed to record them in their paper in The Ibis, 1911; they have also recorded it from Kao Keo and Kao Ram, 1,200 feet, Nakon Sritamarat.[20]

The form occurs from southern Tenasserim south through Peninsular Siam to Singapore and Sumatra.

The species is a small one, easily recognized by its slaty-blue head and underparts; pyrite-yellow back and wings; empire-yellow under tail coverts. Wing, about 75; culmen, 12 mm.

This form seems to be more abundant at the southern end of the Malay Peninsula, though Robinson [21] says it is common throughout the Peninsula from sea level to 3,500 feet, but all the localities he mentions are south of Siamese territory.

A somewhat smaller, brighter form is found in Borneo.

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[14] Ibis, 1911, p. 58.

[15] Journ. Federated Malay States Mus., vol. 5, p. 149, 1915.

[16] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 26, 1913.

[17] Ibis, 1918, p. 199.

[18] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 170, 1936.

[19] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 277, 1924.

[20] Journ. Federated Malay States Mus., vol. 11, p. 61, 1923.

[21] The birds of the Malay Peninsula, vol. 2, p. 168, 1928.

PYCNONOTUS PLUMOSUS PLUMOSUS Blyth

Pycnonotus plumosus BLYTH, Journ. Asiat. Soc. Bengal, vol. 14, p. 567, 1845 (Singapore).

Two males, Bangnara, Patani, May 22, 1924, July 20, 1926; one male, Yala, Patani, January 2, 1931.

Dr. W. L. Abbott collected the following in the Malay Peninsula: One male, Victoria Island, Tenasserim, January 5, 1900; one male, Tanjong Badak, Tenasserim, January 11, 1900; three males, Prahmon, Trang, February 20, 23 and March 10, 1896; one male, Telibon Island, Trang, February 27, 1896; one male, Dungun River, Trengganu, September 19, 1900; one female, Tanjong Dungun, Trengganu, September 21, 1900; one female, Tanjong Laboha, Trengganu, September 28, 1900; one female, Pulo Babi, east coast of Johore, July 28, 1901; two males, Singapore Island, May 12, 1899. He gives the soft parts as: Iris dark red or reddish brown; bill black; feet fleshy brown, claws brownish black.

The present form ranges from southern Tenasserim south through Peninsular Siam to Singapore and the nearby islands, Banka, and eastern Sumatra. It is rare in the north but very common in the southern part of its range.

Robinson and Kloss [22] record it from Koh Rah and Koh Pra Tung, Takuapa, and Kandhuli, Chaiya, which are the northernmost records for Peninsular Siam.

A darker form, *P. p. porphyreus* Oberholser, occurs in west Sumatra and the islands off the west coast of that island, and a larger form, *P. p. chiroplethis* Oberholser, occurs in the Anamba Islands. The Bornean bird has been named *P. p. insularis* by Chasen and Kloss. Some form of the species occurs in Java, but I have seen only two adult skins from there, and they are certainly not the same as mainland birds.

PYCNONOTUS BLANFORDI ROBINSONI Ogilvie-Grant

Pycnonotus robinsoni OGILVIE-GRANT, Fasciculi Malayenses, pt. 3, p. 85, 1905 (Patani).

One male, Nakon Sritamarat, March 16, 1929; one male, Koh Samet, September 1, 1931; one female, Koh Lak, June 15, 1933; one female, Pran, May 27, 1928; one female, Bo Ploi, Kanburi, September 26, 1929; four males and two females, Bangkok, July 30, 1924, February 7, 1925, February 6–April 4, 1926; one male and one female, Pak Chong, October 5, 1926, November 27, 1929, one male, Knong Phra, near Pak Chong, April 16, 1929; one male and three females, Pang Sok, August 19–21, 1926; one female, Lem Sing, Chantabun, June 13, 1926; one female, Koh Chang, March 4, 1924; two males, Hin Lap, October 2, 1932; one female, Udon, February 18,

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[22] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 275, 1924.

1929; one male and one female, Nan, April 14, 15, 1930; one male and two females, Ban Nam Kien, Nan, April 20–22, 1930; three females, Aranya, July 13, 1930. One set of two eggs taken at Bangkok, February 1, 1926.

Not many of these specimens are from Peninsular Siam, but the few available, those from southern and eastern Siam, differ little or not at all from those from northern Siam. Delacour and Jabouille [23] assign all their specimens from French Indo-China to the present form. This being so, the Siamese belong with it also. The only specimen available of *P. b. blanfordi* is a female from Upper Burma in apparently unfaded plumage; it is a much paler bird than any in the series from Siam.

This would make the range of *P. b. robinsoni* extend from the Malay States north through Peninsular Siam to northern Siam and east to Indo-China.

It may be that this is a poorly marked form, hardly worthy of recognition, but my material is not sufficient to settle the question.

Herbert [24] says that at Bangkok the nesting season begins in January and extends to the latter part of September, the hot weather and the early part of the rains being the more general time. He describes the nest and eggs.

PYCNONOTUS SIMPLEX SIMPLEX Lesson

Pycnonotus simplex LESSON, Rev. Zool., 1839, p. 167 (Sumatra).

Microtarsus olivaceus MOORE, *in* Horsfield and Moore, Catalogue of the birds in the Museum of the Hon. East India Company, vol. 1, p. 249, 1854 (Malacca.)

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula: Two males and two females, Trang (Lay Song Hong, September 17, 30, and December 15, 1896; Chong, January 21, 1897); one male and two females, Singapore Island, May 14–26, 1899; one male, Tanjong Peniabong, east coast of Johore, July 24, 1901; one female, Rumpin River, Pahang, May 29, 1902. He gives the soft parts as: Iris white; bill black, pale at base of lower mandible; feet fleshy brown, claws dark brown.

The specimen from Chong, Trang, is a female and differs from the rest of the series in having a slight olive wash above; in being darker below; and in having the under wing coverts chamois instead of naphthalene yellow; size smaller, wing 74 mm. Dr. Abbott records the iris as pale yellow, in the remainder of the series as white, yellowish white, or gray white. Possibly it is not fully adult.

The wing in four males from the Malay Peninsula measures 79–83 (80.9) mm; in five females 74–79 (77) mm.

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[23] Oiseaux l'Indochine Française, vol. 4, p. 39, 1931.

[24] Journ. Nat Hist. Soc. Siam, vol. 6, p. 94, 1923.

Beside the differences between this species and *P. brunneus* pointed out under that species, the present bird is slightly smaller. No differences are noticeable between a small series from Sumatra and that from the Malay Peninsula.

The range extends from Sumatra and a few of the surrounding islands to a few of the islands south of Singapore and thence north through the Malay Peninsula to Trang in Peninsular Siam. Robinson and Kloss [25] state that the latter is the most northerly record known to them.

The Bornean form has been named *P. s. perplexus*.[26] Other forms have been named from the Natuna and Anamba Islands.

PYCNONOTUS BRUNNEUS BRUNNEUS Blyth

Pycnonotus brunneus Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 568, 1845 (Malacca).

Two males, Patalung, July 7, 1929; one female, Haad Yai, July 12, 1929; one immature male, Tha Lo, Bandon, September 27, 1931; one male and one female, Wat Kiriwong, July 25, 1928.

Dr. W. L. Abbott took the following in the Malay Peninsula: Three males and two females, Pulo Langkawi, December 3–6, 1899; two males and one female, Pulo Adang, Butang Island, December 16, 1899; one male and three females, Trang (Lay Song Hong, September 1, 1896; Chong, January 23, 1897; Trang, January 28, 1897, and March 2, 1899); Singapore Island, May 17, 1899; one female, the Dindings, Straits of Malacca, April 16, 1900. He gives the soft parts as: Iris red or orange-red; bill black, pale at base; feet fleshy brown, claws dark horny brown.

Dr. Smith's specimens are paler above and below than any taken by Dr. Abbott, but the former were taken in summer when much bleached, while the latter were taken in winter or early in spring before fading had commenced.

This species and *P. simplex* closely resemble each other, but the latter is paler, less buffy below; under tail coverts and bend of wing naphthalene yellow instead of chamois and iris white.

The wing in seven males from the Malay Peninsula measures 83.5–87 (85.5) mm; seven females 77–84 (80.6) mm.

The immature male from Tha Lo, Bandon, resembles the adult but is darker above, the pileum snuff brown instead of light brownish olive, the underparts much buffier.

P. b. brunneus ranges from Mergui, Tenasserim, south through Peninsular Siam to Singapore, Sumatra, and some of the adjacent islands. Robinson and Kloss [27] record specimens from Tung Pran,

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[25] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 276, 1924.

[26] Chasen and Kloss, Journ. für Orn., Erganzungsband 2, p. 116, 1929.

[27] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 275, 1924.

Takuatung, and Tapli, Pakchan, which seems to be as far north as it has been recorded in Peninsular Siam.

PYCNONOTUS ERYTHROPHTHALMOS ERYTHROPHTHALMOS (Hume)

Ixos erythrophthalmos HUME, Stray Feathers, vol. 6, p. 314, 1878 (Pakchan, Tenasserim).

One female and one unsexed, Bukit, Patani, January 24 and 26, 1931.

Dr. W. L. Abbott collected three males and one female in Trang (Lay Song Hong, December 22, 1896; Chong, January 23, 1897; and Trang, January 27 and 31, 1897). He records the soft parts as: Iris red; orbital ring and gape orange-yellow; bill black; feet fleshy brown, claws dark brown.

This species is similar above to *P. brunneus*, except the tail is raw umber instead of brownish olive and the pileum has a grayish cast rather than brownish olive; below it is lighter with the throat pale olive-gray and the chest light grayish olive or smoke gray, not deep colonial buff; under wing coverts marguerite yellow instead of chamois; bill smaller. It differs from *P. simplex* in having the throat pale olive gray instead of massicot yellow; the tail is raw umber rather than brownish olive; under wing coverts a much lighter yellow and the color of the iris in life is red not white.

The present form ranges from southern Tenasserim south through Peninsular Siam to Singapore and Sumatra. Apparently it is not a common bird in Peninsular Siam, or else it is mistaken for one of the other brown bulbuls that it so much resembles.

Williamson [28] records it from Bangnara, Patani, under the name *P. pusillus;* de Schauensee [29] from Nakon Sritamarat; Robinson and Kloss [30] from Tasan, Chumporn. *P. e. salvadorii* Sharpe is confined to Borneo.

BRACHYPODIUS ATRICEPS ATRICEPS (Temminck)

Turdus atriceps TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 25, pl. 147, 1822 (Java and Sumatra; restricted to Java.)

Two males and two females, Yala Patani, January 30–February 2, 1931; two immature males, Patalung, July 7, 1929; one female, Sichol, Bandon, May 29, 1930; one male, Kao Chong, Trang, August 27, 1933.

Dr. W. L. Abbott collected the following in the Malay Peninsula: four males, four females, and one not sexed, Trang (Telibon Island, February 29, 1896; near Kantany, January 15–16, 1897; Trang, February 9, 1897 and January 24, 1899; near Chong, January 24, 1897; near Kok Sai, December 29, 1898); one male, Pulo Rupat,

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[28] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 59, 1916.

[29] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 206, 1934.

[30] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 276, 1924.

Straits of Malacca, March 13, 1906. He gives the soft parts as: Iris blue; bill and feet black.

This smaller race of black-headed bulbul extends from Tapli, Pakchan, Peninsular Siam,[31] south to the Malay States and Java. It also occurs on Sumatra, Borneo, and Palawan, but it is doubtful whether the birds from these three localities are the same as the Malay race.

BRACHYPODIUS ATRICEPS MAJOR Robinson and Kloss

Brachypodius atriceps major Robinson and Kloss, Journ. Federated Malay States Mus., vol. 11, p. 55, 1923 (North Cachar, Assam).

One adult male and one immature female, Koh Chang, April 5, 1924, and March 10, 1930; one male, Lat Bua Kao, August 11, 1929; one male, Pak Chong, November 27, 1927.

Dr. W. L. Abbott took an adult male on Victoria Island, Tenasserim, January 5, 1900. He gives the soft parts as: Iris blue; bill black; feet brownish black.

The males from Lat Bua Kao and Pak Chong are a lighter, less greenish yellow on the chest and back, and somewhat larger than Peninsular Siam (Trang) specimens. Whether these differences would hold in a larger series is problematical.

Two males from Vientiane, Laos, collected by Dr. Smith present, presumably, a color phase; one is cadmium yellow on the underparts and raw sienna above with a dusky undertone to the back and chest, and the second is assuming the same plumage but has not advanced so far. The adult male from Koh Chang is in a plumage approximating the brightest Vientiane male below, but the back and tail are citrine; the black subterminal tail band broader and the yellow tail tip much reduced. The bird of southeast Siam and French Indo-china may belong to a different form. No birds from northern Siam have been examined.

Gyldenstolpe[32] reports it from Muang Pré. De Schauensee[33] took it on Doi Sutep and later at Chiengsen and Chiengmai.[34] Deignan says it is uncommon on Doi Sutep at 2,700 to 3,000 feet. Robinson and Kloss[35] record a male from Namchut, Pakchan, Peninsular Siam, which is probably the southern limit in this direction. On his third expedition de Schauensee[36] took specimens at Nakon Nayok, Sriracha, and Chantabun; the record from Nakon Sritamarat without doubt belongs to *B. a. atriceps*.

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[31] Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 5, p. 268, 1924.

[32] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 27, 1913.

[33] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 569, 1928.

[34] Proc. Acad. Nat. Sci., Philadelphia, vol. 81, p. 541, 1930.

[35] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 268, 1924.

[36] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 206, 1934.

This would give a rough range for the form from North Cachar south through Upper Burma, all Siam north of the Isthmus of Kra and possibly French Indo-China.

Family TROGLODYTIDAE: Wrens

PNOEPYGA PUSILLA PUSILLA Hodgson

Pnoepyga pusillus HODGSON, Proc. Zool. Soc. London, 1845, p. 25 (Nepal).

Two males, Doi Nangka, April 22, 27, 1931; three males, Pang Meton (Doi Nangka), May 2–5, 1931.

One male has the feathers of the lower parts edged with white, the centers of the feathers dark olive; the throat white with very narrow dark olive borders to the feathers. The other four males have the feathers of the lowerparts edged with cinnamon-buff, the feathers of the throat entirely of this color or slightly edged with dark olive. One of the buff-colored males is becoming white on the throat.

Stuart Baker[37] regards these differences in a related species, *P. squamata*, as sexual. If this is correct, most of the specimens in the United States National Museum are wrongly sexed. A specimen from Suifu, Szechwan, has the feathers of the lowerparts edged with white and resembles the Doi Nangka specimen in this stage of plumage and evidently belongs to this form.

The range of the form extends from Nepal, Assam, Burma, and western China to Siam.

Robinson and Kloss[38] say that a pair taken on Kao Nawng, 4,000 feet, Bandon, are intermediate between this and *P. p. harterti* of the Malay States. Apparently there are no other records for Siam.

The species has been divided into a number of forms.

Family TURDIDAE: Thrushes

BRACHYPTERYX LEUCOPHRIS NANGKA (Riley)

Heteroxenicus nangka RILEY, Proc. Biol. Soc. Washington, vol. 45, p. 59, 1932 (Pang Meton, Doi Nangka, Siam).

One female, Doi Nangka, April 22, 1932; three males and one female, Pang Meton, Doi Nangka, April 22-May 6, 1932.

This form is similar to *B. l. leucophris* of Java, but is lighter, less rusty above; below the pectoral band is broader and the white of the throat lightly edged with tawny-olive, pure white in *leucophris*. The two forms are of about the same size.

This is a small bird with a short tail, snuff brown above; white below with a tawny-olive pectoral band; flanks tawny-olive. The male has a supraloral white streak; the female has this streak obscured by buffy. The sexes are of about the same size.

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[37] The fauna of British India, Birds, ed. 2, vol. 1, p. 458, 1922.

[38] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 304, 1924.

The five specimens measure: Wing, 59–61 (59.7); tail, 30-36.5 (32.6); culmen, 12.5–13 (12.7); tarsus, 28–28.5 (28.1); middle toe without claw, 15–16 (15.5) mm.

The male of *B. nipalensis* is slate-color above; the female, however, is remarkably like *nangka* but is somewhat lighter above, lacks the cinnamon-brown wash, and has the white supraloral streak of the male *nangka;* the white streak extends farther back, however. The two species are of about the same size. Birds of this genus are very puzzling and are not well understood. It seems remarkable that a race of *leucophris* should be found in northern Siam. In *B. wrayi* of the high mountains of the Malay States the male is slate-colored, as in *nipalensis*.

Robinson and Kloss [39] record *B. l. leucophris* from Kao Nawng and Kao Luang, Nakon Sritamarat; it is quite probable the records belong rather to the present form.

B. carolinae La Touche of Fukien, China, is also very similar to *B. nangka*, judged from descriptions. Delacour and Jabouille [40] record *carolinae* from Tonkin, Laos, and southern Annam. This, it seems to me, requires reconsideration. Birds of this genus are very sedentary.

LARVIVORA CYANE (Pallas)

Motacilla cyane Pallas, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, p. 697, 1776 (Dauria).

One male and two females, Kao Soi Dao, December 30, 1933, January 8, 1934; one male, Huey Yang, Kao Luang, Nakon Sritamarat, October 6, 1930; one immature male, Koh Chang, January 5, 1926; one female, Mekhan, February 8, 1932; one female, Kao Sabap, October 23, 1933.

Dr. W. L. Abbott took two immature males and one female in Trang (Lay Song Hong, December 27, 1896; Chong, January 22, 1897; Trang, February 1, 1897); one adult male and one adult female, Mergui Archipelago (Domel Island, February 24, 25, 1900).

This species breeds in eastern Siberia and the northern islands of Japan and migrates southwesterly through central China to Laos, Annam, Siam, Tenasserim, the Malay Peninsula, and Borneo to winter. Apparently it occurs pretty much all over Siam in winter and down Peninsular Siam to the Malay States.

De Schauensee [41] says that it is not an uncommon migrant on Doi Sutep.

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[39] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 302, 1924.

[40] Oiseaux l'Indochine Française, vol. 3, p. 101, 1931.

[41] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 208, 1934.

SAXICOLA CAPRATA BURMANICA Baker

Saxicola caprata burmanica Baker, Bull. Brit. Orn. Club, vol. 43, p. 19, 1923 (Pegu).

Three males and one female, Chomtong, November 30 and December 10, 1928; one male, Chiengmai, November 27, 1928; one male, Chiengdao, January 28, 1932; two males, Muang Pai, December 26, 27, 1932; one male, Mae Hong Sorn, January 7, 1933.

This form is found over the whole of Burma, Yunnan, Assam, south of the Brahmaputra, northern Siam, Cambodia, Cochinchina, and Laos.

Gyldenstolpe[42] records it from Khun Tan and Chienghai; Deignan[43] from Chiengmai; Lowe[44] from Umpang. De Schauensee[45] lists it from Tung Sio and Chiengmai. So far as I am aware, it has been taken thus far only in northern Siam. The species is tropical, and besides other forms in India there are several found in the larger islands or groups of islands to the southeast of Asia.

SAXICOLA TORQUATA STEJNEGERI (Parrot)

Praticola rubicola stejnegeri Parrot, Verh. Orn. Ges. Bayern, vol. 8, p. 124, 1908 (northern Japan).

Three males and two females, Bangkok, October 19, 23, 1924, October 23, 28, 1925, November 3, 1926; one female, Korat, February 14, 1929; one male, Nong Preng, January 29, 1927; one male and one female, Bua Yai, February 15, 1929; one female, Pak Chong, November 26, 1929; one male, Nan, April 16, 1930.

This form breeds in eastern Siberia and northern Japan and migrates through eastern China in fall to winter in southern China, Tonkin, Annam, Cochinchina, Cambodia, Laos, Siam, Burma, and Assam.

This is the common winter stonechat of Siam proper, and it has been obtained in Peninsular Siam as far south as Namchuk, Pakchan, and there are examples from Kuala Lumpur, Selangor, in the Raffles Museum.[46]

RHODOPHILA FERREA HARINGTONI (Hartert)

Oreicola ferrea haringtoni Hartert, Die Vögel der paläarktischen Fauna, vol. 1, Heft 6, p. 711, 1910 (Lienkiang near Foochow, China).

Three males and one female, Doi Angka, 2,000–4,000 feet, December 2–8, 1928, November 20, 1930; two males and one female, Khun Tan Mountains, 3,000–4,200 feet, November 19–22, 1928; two males and two females, Khun Tan, October 19–28, 1929, February 23, 1932; two males and one female, Doi Sutep, 3,000 feet to summit, December

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[42] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 51, 1916.

[43] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 141, 1931.

[44] Ibis, 1933, p. 269.

[45] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 208, 1934.

[46] Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 5, p. 315, 1924.

14, 1928, February 3, 1932; one male, Doi Mana, December 30, 1932; one female, Um Mong Valley, December 31, 1932; one male, Mae Hong Sorn, January 9, 1933.

This race is found from the Kachin and Chin Mountains of Burma eastward to Yunnan and all south China eastward to Fukien; southward it extends to Tonkin, southern Annam, Laos, and northern Siam. It seems to be resident where found but breeds only in the mountains, descending to the valleys in winter.

Count Gyldenstolpe[47] was able to report it only from Khun Tan, where it seemed to be rare; it has since been found to be more or less a common bird in the mountains of northern Siam, judged from the number of specimens taken by Dr. Smith. In northern Siam it may be only a winter resident, as Deignan[48] reports it common only on Doi Sutep from October to March.

ENICURUS SCHISTACEUS SCHISTACEUS (Hodgson)

Motacilla schistaceus Hodgson, Asiat. Res., vol. 19, p. 189, 1836 (Nepal).

One male, Pang Meton (Doi Nangka), May 1, 1931; one immature female, Doi Hua Mot, August 26, 1934; two females, Ban Padieng, December 22, 1932; one male, Huey Lak, December 23, 1932; one male and one female, Song Kwe Valley, January 20, 1933.

All these localities are in the north; it has not been taken elsewhere in Siam, so far as I am aware.

Count Gyldenstolpe[49] reports it from Khun Tan and Doi Par Sakeng; it has been taken on Doi Sutep by de Schauensee and Deignan, the latter recording it as occurring between 2,000 and 3,600 feet[50]; de Schauensee[51] also secured it on Chiengdao.

The form ranges from Kumaon to eastern Assam, Burma, southern Tenasserim, Yunnan, western Szechwan, and northern Siam to Laos, Tonkin, and southern Annam. Robinson and Kloss[52] say that it is known from the Malay States from two localities, Perak and the Pahang-Selangor boundary.

The form occurring in Fukien and Kwantung, southern China, has been separated by Swinhoe and recognized by La Touche as *E. s. leucoschistus*,[53] but judged from the latter's remarks it must be very close to *schistaceus*, if separable at all.

I have examined no specimens from India or southeastern China but have a small series from western Szechwan; unfortunately most of them are unsexed. The Siamese series seems to be a darker gray above than those from Szechwan, but the difference is small.

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[47] Ibis, 1920, p. 475.

[48] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 142, 1931.

[49] Ibis, 1920, p. 476.

[50] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 142, 1931.

[51] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 209, 1934.

[52] Journ. Nat. Hist. Soc Siam, vol. 5, p. 310, 1924.

[53] A handbook of the birds of eastern China, vol. 1, pt. 2, p. 135, 1925.

ENICURUS IMMACULATUS Hodgson

Enicurus immaculatus Hodgson, Asiat. Res., vol. 19, p. 190, 1836 (Nepal).

One female, Khonka Valley, January 9, 1933.

This seems to be a new record for Siam. Its range is Garhwal to Assam, the Chin Hills, Burma, Tenasserim, and northern Siam.

This species is of about the same size as *schistaceus* and much of the same color pattern, except the back is black instead of gray and the white frontal patch is larger and extends farther back.

ENICURUS LESCHENAULTI INDICUS Hartert

Enicurus leschenaulti indicus Hartert, Die Vögel der paläarktischen Fauna, vol. 1, Heft 6, p. 760, 1910 (Margherita, upper Assam).

One male, Doi Nangka, November 13, 1930; one female, Pang Meton (Doi Nangka), April 29, 1931; one male, Khun Tan, 3,000 feet, February 20, 1932.

Count Gyldenstolpe [54] says that this form is recorded from northern and northwestern Siam, where specimens have been taken at Khun Tan and Doi Par Sakeng. Deignan records it as uncommon on Doi Sutep from 2,500 to 4,600 feet;[55] de Schauensee records it from Chiengsen [56] and Chiengdao, 2,000 feet.[57] Chasen and Kloss [58] list it from the Raheng district, western Siam.

The form ranges from Sikkim to eastern Assam, Burma, south to Tenasserim and northern Siam, east to Laos, Tonkin, and northern Annam.

In southern China and the Shan States of Burma *E. l. sinensis* occurs. It differs from *indicus* in having the second outer tail feather more than 25 mm longer than the outer; in *indicus* there is little difference in length, the outer tail feather being only about 10 mm shorter. The two forms may possibly be separate species. *E. l. leschenaulti* is found in Java, and in the only specimen examined by me the outer tail feather is only about a fourth as long as the second. If this condition is not abnormal, I do not believe the northern forms belong in the same form group at all.

HYDROCICHLA FRONTALIS (Blyth)

Enicurus frontalis Blyth, Journ. Asiat. Soc. Bengal, vol. 16, p. 156, 1847 (Malay Peninsula).

One male, Sichol, Bandon, August 29, 1929.

Dr. W. L. Abbott took an adult female at Tanjong Badak, Tenasserim, January 5, 1900. This specimen has a brownish tinge not seen in the Sichol male.

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[54] Ibis, 1920, p. 476.

[55] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 142, 1931.

[56] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 543, 1930.

[57] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 209, 1934.

[58] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 177, 1928.

This species occurs in Borneo, Sumatra, and the Malay States north through Peninsular Siam to southern Tenasserim.

Robinson and Kloss record it from Trang [59], Junkseylon [60] and Kao Luang, 2,000 feet, Nakon Sritamarat [61]; Robinson [62] from Kao Nawng, Bandon; Baker [63] from Tung Song.

It is not nearly so common as *H. ruficapilla*, and not much is known of its habits.

HYDROCICHLA RUFICAPILLA (Temminck)

Enicurus ruficapillus Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 90, pl. 534, 1832 (Palembang, Sumatra).

Five males and one female, Sichol, Bandon, August 30–September 3, 1929, May 20, 1930; two males and two females, Kao Luang, 1,000 feet, Nakon Sritamarat, July 17–23, 1928; four males, Kao Soi Dao, Trang, September 1–December 21, 1933.

Dr. W. L. Abbott collected four males and five females, Trang (Trang, January 30–February 7, 1897; Kao Nom Plu, 1,000 feet, February 25, 1897; Kao Soi Dao, 1,000 feet, February 4–20, 1899). He gives the soft parts as: Iris dark brown; bill black; feet fleshy white; claws white.

A female taken by Dr. Abbott, February 1, 1897, contained two nearly mature eggs.

In the series collected by Dr. Smith there are two immature males taken September 2 and 3. They have begun to assume the first winter plumage; the black barring has begun to appear faintly on the chest; the back is chestnut like the adult female but duller. In the adult male the back is black, only the crown, nape, and hind-neck chestnut.

The species extends from the Malay States north to southern Tenasserim, Sumatra, and Borneo. Robinson and Kloss [64] report it from as far north in Peninsular Siam as Tasan, Chumporn.

CYANOSYLVIA SUECICA ROBUSTA (Buturlin)

Cyanecula suecica robusta Buturlin, Psovaia i Ružheinaia Okhota, vol. 13, p. —, March 1907, and Orn. Monatsb., 1907 (May), p. 79 (Kolyma Delta).

One male, Potaram, February 4, 1926; one female, Bung Borapet, March 21, 1933.

Dr. Smith also secured a male at Vientiane, French Laos, February 20, 1929.

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[59] Ibis, 1911, p. 64.

[60] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 112, 1919.

[61] Journ. Federated Malay States Mus., vol. 11, p. 62, 1923.

[62] Journ. Federated Malay States Mus., vol. 5, p. 107, 1915.

[63] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 409, 1919.

[64] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 310, 1924.

This form breeds in northeastern Siberia and migrates late in summer or early in fall through northeastern China to southern China, Laos, Siam, and northeastern India to winter.

It does not appear to be a common winter visitor to Siam and there are few records. Williamson[65] took a number at Bangkok, during the winter of 1917–18; Deignan[66] found it locally common at Chiengmai in February and March; de Schauensee[67] secured specimens at Meklong, May 8, and Hua Mak, March 17.

CALLIOPE TSCHEBAIEWI Przewalski

Calliope tschebaiewi PRZEWALSKI, Mongol i strana Tangut, vol. 2, p. 44, pl. 9, fig. 1, 1876 (mountains of Kansu).

One male, Bangkok, December 28, 1925.

This is the first record of this thrush for Siam. The species breeds in the mountains of western China, Tibet, and Ladak and winters in Burma, Assam, and rarely in Siam.

CALLIOPE CALLIOPE (Pallas)

Motacilla calliope PALLAS, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, pp. 261, 325, 697, 1776 (Siberia).

One male, Muang Kanburi, April 11, 1928; one male, Chiengmai, November 24, 1928; one male, Doi Nangka, November 4, 1930; five males, Bung Borapet, March 21–30, 1933.

This species breeds in northern Siberia and Japan. In fall it migrates through China to Tonkin, Annam, Laos, Siam, India, and the Philippines to winter.

Deignan[68] reports it a common bird of passage at Chiengmai in March and recorded once in December; this would indicate that it winters farther south. It is known to winter at Bangkok. Apparently it is unrecorded from Peninsular Siam, but as it winters in Tenasserim, it will be found eventually in the northern part at least. De Schauensee[69] secured it at Chiengmai, January 1–30, and at Chiengdao, January 16.

IANTHIA CYANURA CYANURA (Pallas)

Motacilla cyanurus PALLAS, Reise durch verschiedene Provinzen des russischen Reichs, vol. 2, pp. 664, 690, 709, 1773 (Yenesei, near Küskoe and near Abakansk).

One male and one female, Doi Angka, 8,000 feet, December 5, 1928.

This form breeds in northern Siberia from the Urals eastward to Kamchatka and northern Japan; in fall it migrates to southern

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[65] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 21, 1918.

[66] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 142, 1931.

[67] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 209, 1934.

[68] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 142, 1931.

[69] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 210, 1934.

China, Tonkin, northern Annam, Laos, northern Siam, and Cachar, India (one record) to spend the winter.

In Siam it is not a common winter resident apparently, as the only previous record known to me is one by de Schauensee[70] of a single male shot on Doi Sutep, 5,500 feet, December 12, one of a pair; this same record was afterward given by Deignan.[71]

MUSCISYLVIA LEUCURA Hodgson

Muscisylvia leucura HODGSON, Proc. Zool. Soc. London, 1845, p. 27 (Nepal).

Two males and one female, Doi Nangka, November 12, 1930, April 22, 27, 1931; one male, Pang Meton (Doi Nangka), May 6, 1931; one male, Ban Padieng, December 22, 1932.

De Schauensee[72] took a male at Chiengsen in January, and on his third expedition[73] he secured a female at Khun Tan, January 3; Deignan[74] took a female on Doi Sutep, 3,200 feet, in February, and later[75] an immature on Doi Angka, 4,600 feet, September 2, 1935. It has been found on Gunong Ijau, Perak, at about 4,000 to 4,700 feet, and this is the only place in the Malay Peninsula where it has been obtained. Robinson remarks that the female is darker and may represent a different race.[76]

The United States National Museum possesses a pair from the Langbian Peaks region of southern Annam. The female when compared with the Siamese female is much more russet above and a deeper tawny-olive on the chest; among other differences the belly of the Siam bird is smoke gray while that of the one from Annam is isabella color. Two females could hardly look more different. The male from Annam is not so different but is a little lighter blue above. I doubt very much if the Annam and Siam specimens belong to the same form.

This does not seem to be a common bird in Siam, where at present it has been recorded only from the mountains in the north.

The male taken at Pang Meton, May 6, is in its second year and is molting from the brown into the blue plumage. It has almost fully acquired the latter, only a few old brown feathers remaining in the scapulars and the greater wing coverts; the new blue plumage is considerably lighter than in the adult and would require at least one more molt to attain fully adult condition.

The range of the form is from Simla through Nepal and Sikkim to eastern Assam, Burma, Yunnan, western Szechwan, northern Siam, Laos, and Tonkin; doubtfully in the mountains of Perak, Malay States.

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[70] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 543, 1930.

[71] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 142, 1931.

[72] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 543, 1930.

[73] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 210, 1934.

[74] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 142, 1931.

[75] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 10, p. 65, 1935.

[76] The birds of the Malay Peninsula, vol. 2, p. 226, 1928.

COPSYCHUS SAULARIS SAULARIS (Linnaeus)

Gracula saularis LINNAEUS, Systema naturae, ed. 10, p. 109, 1758 (Bengal).

Five males and three females, Bangkok, January 19 and October 29, 1925, April 3, May 29, and October 27, 1926, and May 12, 1932; one female, Bung Borapet, June 28, 1932; one male, Koh Chang, January 11, 1926; one male and one female, Ban Nam Kien, Nan, April 22, 1930; one male, Koh Lak, June 15, 1933.

One of the males (no. 308697), Bangkok, May 29, has the base of the second outer tail feather black, the black reaching nearly halfway down on the third and two-thirds down on the fourth. It is a breeding bird and could very well be placed with the next form (*erimelas*), but as all the others taken at this locality are *saularis* I prefer for the present to regard it as an intermediate; the Koh Chang male is more or less intermediate also. The male from Koh Lak is in worn plumage; the exposed portions of the three outer tail feathers are white, the fourth with a black border on the inner web.

The range of this form extends from India through Burma to Siam proper, but not Peninsular Siam.

Female specimens from southern China, Tonkin, and Laos, are somewhat lighter both above and below than Siamese specimens. There appears to be no difference in size.

Ten males from southern China (6), Tonkin (1), and Laos (3) measure: Wing, 96–104 (100); tail, 85.5–96.5 (90.6); culmen, 18.5–20 (19.2) mm. Eight males from India (1) and Siam (7): Wing, 97–103 (99.6); tail, 86–96 (89.8); culmen, 17–20.5 (19.2) mm. The females measure smaller, but the series of this sex at my command is not large, and so measurements are not given.

COPSYCHUS SAULARIS ERIMELAS Oberholser

Copsychus saularis erimelas OBERHOLSER, Smithsonian Misc. Coll., vol. 76, no. 6, p. 1, 1923 (Kankarit, Houndraw Branch, Tenasserim).

Copsychus saularis haliblectus OBERHOLSER, *ibid.*, p. 2 (Domel Island, Mergui Archipelago).

One female, Patalung, July 9, 1929; one young male almost adult, Tha Lo, Bandon, September 17, 1931.

Dr. W. L. Abbott collected the following specimens in the Malay Peninsula or vicinity: Four males and one female, Trang (Telibon Island, February 27; Prahmon, March 2, April 1; Lay Song Hong, September 26, all in 1896); three males and one female, Tenasserim (Tanjong Badak, January 12, 1900, and December 11, 1903; Victoria Point, March 31, 1900); one female, Domel Island, Mergui Archipeligo; three males, two females, and two spotted young, Singapore Island, May 12, 25, 1899, October 15, 29, 1899; one male and one female, Kemamun River and Packa River, Trengganu, September 25 and October 2, 1900.

Dr. Smith's male from Bandon has almost acquired the fully adult black plumage. One outer feather of the alula on the left wing, the outer first primary on the right wing, and several outer secondaries of both wings are all that remain of the immature plumage; the tail is about half grown, but the outer feathers are far enough advanced to show the pattern and to indicate that it is more or less intermediate between *saularis* and *erimelas*, somewhat nearer the latter, however. The fact is that many of the Tenasserim birds, apparently, are intermediate and that the tail pattern becomes progressively blacker from the north to the south of the bird's range.

In Tenasserim the male has the exposed portion of the two outer tail feathers white; the third outer tail feather a little over a third black at the base, the black running down the inside web considerably farther; the fourth feather with a small white spot. Specimens from Singapore have the black on the third outer tail feather considerably increased. I have examined only two males from Sumatra, the type of *C. s. ephalus* Oberholser and a male from Loh Sidoh Bay. Apparently they do not differ sufficiently from Malayan birds to warrant recognition; the wings are a little longer than any measured from the Malay Peninsula, 107 mm for the type and 108 mm for the other; whether this difference would hold in a larger series is problematical. This name was given to supplant *Lanius musicus* Raffles, claimed to be a pure synonym of *Gracula saularis* Linnaeus, but if the Peninsular and Sumatran forms are the same, then *C. s. erimelas* is the name to use for it, as they were both named in the same paper and the latter has page priority. If the Sumatran race should prove to be separable, then the name need not concern Siamese ornithologists.

Four males from Tenasserim measure: Wing, 95–104 (100.5); tail, 81–90 (84.8); culmen, 18–21 (19.9) mm. Three males from Trang: Wing, 100–103 (101); tail, 86–90 (88); culmen, 19–20.5 (19.8) mm. Four males from the Malay States (3) and Rhio Archipelago (1): Wing, 98–104 (101.8); tail, 90–94 (92.7); culmen, 18–20 (19.2) mm.

Specimens from southern Siam and southeastern Siam are intermediate between *saularis* and *erimelas* but on the whole probably nearer the former. For the present, therefore, the range of *erimelas*, so far as can be told, is Tenasserim, south through Peninsular Siam to the Malay States and some of the islands to the south of Singapore.

KITTACINCLA MALABARICA INTERPOSITA Robinson and Kloss

Kittacincla malabarica interposita Robinson and Kloss, Journ. Federated Malay States Mus., vol. 10, no. 4, p. 262, Dec. 1922 (Daban, southern Annam).

Kittacincla malabarica pellogyna Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 4, July 1923 (Bok Pyin, Tenasserim).

Kittacincla malabarica lamprogyna Oberholser, *ibid.*, p. 5 (St. Luke Island, Mergui Archipelago).

One male, Koh Lak, June 24, 1933; ten males, Pran, May 27–June 1, 1928, April 2–4, 1931; one female, Kwe Noi, Kanburi, September

24, 1929; three males, Muang Kanburi, April 8–15, 1928; two immature males, Aranya, July 14, 16, 1930; one male, Vichienburi, February 26, 1934; one immature male, Lat Bua Kao, August 9, 1929; one male, Muck Lek, April 16, 1933; one female, Hin Lap, September 30, 1932; one male, Sikeu, near Korat, February 16, 1926; one female, Tha Chang, March 18, 1927; eight males and six females, Pak Chong, February 5 and May 10–11, 1925, May 4–9, and December 20, 1926, November 16–26, 1929; one immature male, Knong Phra, Pak Chong, April 12, 1929; one male, Sriracha, April 19, 1934; two males, Nong Khor, near Sriracha, September 27, 1925, February 10, 1927; one adult male and one immature male, Ban Sadet, Sriracha, May 28, 30, 1925; one female, Hupbon, November 2, 1931; two males, Lem Sing, Chantabun, June 26, 1931; one female, Nong Yang, November 6, 1931; three males, Koh Kut, May 24, 25, 1929; three males, Kao Seming, Krat, October 12, 17, 1928; one female, Kao Ban Tad, Krat, December 22, 1929.

Dr. W. L. Abbott collected one female, Bok Pyin, Tenasserim, February 14, 1900 (type of *pellogyna*); one male and three females Mergui Archipelago (Domel Island, February 24, 27, 1900; St. Luke Island, January 21, 1900; the last is an immature female and the type of *lamprogyna*). He gives the soft parts as: Iris dark brown; bill black; feet pale fleshy.

This is a slightly darker and smaller form than the Malay Peninsula race. With it I would place the specimens from southern Tenasserim and the Mergui Archipelago.

In the present series there are a number of immature specimens, the immature in the spotted plumage being white on the breast and belly but becoming red at the next molt, not so deep as in the adult, however, and the females never so deep as the males. At successive molts the breast becomes darker until the fully adult plumage has been assumed. The rusty edging on the wing persists after an apparently adult plumage has been assumed and seems to be retained in the female, even in the adult. Therefore the female may vary from a very light plumage on the breast and belly in birds in the first winter plumage to quite red on these parts in older birds. The reason for mentioning these changes is that a number of nominal races have been separated by Dr. Oberholser.

The type of *pellogyna*, Bok Pyin, Tenasserim, is a female, whitish on the belly and rusty on the chest. The type of *lamprogyna*, St. Luke Island, Mergui Archipelago, is also a female, whitish on the breast and belly with less rusty on the chest. In the series of females of *interposita* collected by Dr. Smith, the specimens vary from a bird that almost matches the type of *lamprogyna* below to one that almost matches the type of *abbotti* on the lower parts, and I believe these races are founded upon individual age characters and are not geographic. In the females the upperparts also vary from a steely black to a dark gray with a rusty fringe to the feathers, the latter mostly winter-taken birds, and this rusty fringe wears off or becomes reduced as the breeding season approaches. The types in the two Tenasserim forms cited above are not, in my opinion, fully adult birds.

Seventeen males from eastern and southeastern Siam measure: Wing, 88.5–96 (92.6); tail, 152–193 (173.3); culmen, 15–17 (16) mm. Ten males from southwestern Siam: Wing, 90–95 (92.4); tail, 137–178 (156); culmen, 14.5–17 (16) mm. Three males from Tenasserim and one from the Mergui Archipelago: Wing, 91–101 (95.7); tail, 155–174 (168); culmen, 16–18 (16.9) mm.

The range of the present form would extend then from southern Tenasserim to southwestern, central, eastern, and southeastern Siam and eastward through southern Indo-China to southern Annam.

Dr. Smith's series shows the range of this form in Siam very well, except for the islands. Robinson [77] records it from Koh Chang, Koh Klum, Koh Kut, Koh Kra, and Klong Menao, southeastern Siam.

KITTACINCLA MALABARICA TRICOLOR (Vieillot)

Turdus tricolor Vieillot, Nouv. Dict. Hist. Nat., ed. 2, vol. 20, p. 291, 1818 (islands of the South Seas, pl. 114 of Levaillant; type fixed by Robinson and Kloss[78]; West Java).

Kittacincla malabarica mallopercna Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 5, 1923 (Sing Kep Island, southeastern Sumatra).

Kittacincla malabarica abbotti Oberholser, *ibid.*, p. 5 (Banka).

Three adult males, one immature male, and one female, Bangnara, Patani, May 22, 30, 1924, July 6–15, 1926; one male, Yala, Patani, February 2, 1931; one male, Singora, July 2, 1929; two males, Kao Soi Dao, Trang, December 23, 28, 1933; one female, Kao Chong, Trang, August 28, 1933; four males, Kao Luang, Nakon Sritamarat (one at 2,000 feet), July 21, 1928, October 2, 6, 1930; two adult males and three immature males, Sichol, Bandon, September 5, 1929; May 15, 24, 1930; one male, Tha Lo, Bandon, September 13, 1931; one male and one female, Koh Pangan, Bandon, July 22, 30, 1931; one male, Koh Samui, Bandon, August 7, 1931.

Dr. W. L. Abbott collected five males in Trang (Telibon Island, February 25, 28, 1896; Lay Song Hong, November 28, 1896; Trang, January 28 and February 3, 1897); two males, Singapore Island, May 16, 1899; one male, Pulo Langkawi, December 3, 1899, one female, Pulo Adang, Butang Islands, December 15, 1899; one female, Pulo Tinggi, east coast of Johore, August 3, 1901. He gives the soft parts as: Iris dark brown; bill black; feet pale fleshy pink.

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[77] Ibis, 1915, p. 753.

[78] Journ. Nat. Hist. Soc. Siam. vol. 5, p. 314, 1924.

This considerable series averages somewhat larger and paler than specimens from southwestern and southern Siam. As a matter of fact, the birds from Trang north to Bandon are somewhat intermediate but on the whole are best placed with the southern form.

The series from west Java examined has been inadequate, consisting of only two males, so I am following Robinson and Kloss[79] in assigning the Malay Peninsula birds to the west Javan form. The series from Sumatra has been small but averages somewhat deeper in color than the Trang series, though individual specimens in the latter and two or more specimens from farther south match them and in size the Sumatran birds agree with the southern race.

The type of *K. m. abbotti* from Banka is a female, very dark above and very red on the breast for this sex. The series of adults of this sex in the series is surprisingly small and none matches it. However, I have seen such specimens in the more northern form and believe this is only a very old female of the Sumatran race. The type of *K. m. mallopercna* from Singkep Island is lighter colored.

Seventeen males from Singapore north to Bandon measure: Wing, 93.5–105 (96.6); tail, 142.5–192 (170.5); culmen, 16–18 (17.2) mm. Four males from Sumatra: Wing, 93–99 (95.7); tail, 160–184 (171.4); culmen, 17–18 (17.4) mm.

The range of this form would extend then from western Java to Banka, Sumatra, the Malay States, and Peninsular Siam, north to Bandon. Dr. Smith's series shows its distribution in Peninsular Siam fairly well.

TURDUS OBSCURUS OBSCURUS Gmelin

Turdus obscurus Gmelin, Systema naturae, vol. 1, pt. 2, p. 816, 1789 (Lake Baical).

One female, Doi Angka, 8,000 feet, December 5, 1928; one female, Doi Nangka, April 26, 1931; one male, Pang Meton (Doi Nangka), May 1, 1931.

This bird breeds in Siberia from the Yenisei east to the Amur and migrates south to southern China, Indo-China, Assam, Burma, and Siam; south through Peninsular Siam to the Malay States, Borneo, Sumatra, the Philippines, and as far south as the Pelew Islands to winter.

It seems to be more or less of a common winter resident in Siam proper and Peninsular Siam.

There are numerous records from the mainland. Robinson[80] records it from Pulo Terutau.

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[79] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 314, 1924.

[80] Journ. Federated Malay States Mus., vol. 7, p. 180, 1917.

GEOKICHLA CITRINA CITRINA (Latham)

Turdus citrinus LATHAM, Index ornithologicus, vol. 1, p. 350, 1790 (India).

One female, Khun Tan Mountains, 3,000 feet, May 12, 1933.

Dr. W. L. Abbott collected the following: One male, near Koh Sai, Trang, December 27, 1898; two males and two females, Tenasserim (Tanjong Badak, January 10, 1900; Sungei Balik, November 29, 1900; Pakchan River, December 19, 1900; Red Point, February 18, 1904); two males and one female, Mergui Archipelago (Helfer Island, March 6, 1900; Bentinck Island, March 8, 1900; Sullivan Island, January 6, 1904). He describes the soft parts as: Iris dark brown; bill black, leaden beneath at base; feet fleshy white or pale brownish fleshy.

The female from the Khun Tan Mountains has the white tips to the median wing coverts barely indicated.

The form ranges in the Himalayas from Murree to Simla and Garhwal to Assam, Burma, Yunnan, northern Siam, and southern Tenasserim. In winter it wanders far south of its breeding range and has been taken in Peninsular Siam as far south as Trang. It has also been taken rarely in the Malay States.

Robinson and Kloss [81] record it in Trang, Langkawi, and Terutau; Robinson [82] adds the localities Pulo Dayang Bunting and Pulo Lontar; Robinson and Kloss [83] Kao Ram, 1,000 feet, and Kao Luang, Nakon Sritamarat, Ghirbi, and the vicinity of Junkseylon (Puket)[84]; Gyldenstolpe,[85] Koh Lak Paa and Koh Lak; Robinson [86] states that it is very rare in the Malay States; there are specimens in the British Museum labeled Malacca, two in the Seebohm collection very likely from Perlis or north thereof, but the only specimen obtained in late years was shot on Menang Gasing, 3,000–4,000 feet, February 7, 1912. All the Peninsula records are for birds taken in winter or late in spring.

GEOKICHLA CITRINA INNOTATA Blyth

Geocichla innotata BLYTH, Journ. Asiat. Soc. Bengal, vol. 15, p. 370, 1846 (Malay Peninsula).

One male and one female, Khun Tan Mountains, 3,000 feet, May 9, 13, 1933; one male, Kao Sabap, November 21, 1933; one female, Kao Soi Dao, Trang, December 27, 1933.

Dr. Abbott took a male on Kao Nom Plu, 2,000 feet, Trang, February 22, 1897. He describes the soft parts as: Iris deep brown; bill black, pale leaden beneath; feet pale fleshy.

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[81] Ibis, 1911, p. 63.

[82] Journ. Federated Malay States Mus., vol. 7, p. 179, 1917.

[83] Journ. Federated Malay States Mus., vol. 11, p. 62, 1923.

[84] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 110, 1919.

[85] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 46, 1916.

[86] The birds of the Malay Peninsula, vol. 2, p. 231, 1928.

Besides these the United States National Museum contains one male from Koh Kut, December 26; two males from the Raheng region, western Siam, May 27 and June 4; and one male, Dalat, southern Annam, May 5.

The range of this race roughly extends from northern Siam down Peninsular Siam as far as Trang and from southeastern Siam and some of the adjacent islands off the coast into Cambodia, southern Annam, and Laos.

Gyldenstolpe[87] long since recorded a male from Khun Tan; de Schauensee[88] took adults and an immature at Chiengmai, 4,500 feet, July 21.

Robinson and Kloss[89] state that in a very large series of birds in the Raffles Museum from the Malay Peninsula and its adjacent islands from the Isthmus of Kra to Selangor, they have seen no specimens of this race south of Trang and that in spite of the apparent evidence afforded by the birds of Koh Kut and southern Annam they are strongly inclined to think that *innotata* has no existence, even as a subspecies. It is possible, though, that *innotata* is the resident form from northern Siam southward and that *citrina* is only a winter visitor.

G. c. innotata is distinguished from *citrina* by the absence of the white tips to the median wing coverts.

GEOKICHLA INTERPRES (Temminck)

Turdus interpres (Kuhl MS.) TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 75, pl. 458, described on same sheet of text as pl. 445, 1827 (Java and Sumatra).

Dr. W. L. Abbott collected one male, Lay Song Hong, Trang, December 20, 1896. He describes the soft parts as: Iris dark brown; bill black; feet fleshy white.

Dr. C. W. Richmond[90] recorded the above specimen in an introduction to a paper on three new birds from Trang; Robinson and Kloss[91] record a male from Tasan, Chumporn, Peninsular Siam, taken March 14, 1919, and say they also have it from Tampin, near Malacca. Previously they had recorded it from the hills of Negri Sembilan.[92] Hume[93] referred a specimen taken in Rembau, in what is now Negri Sembilan, to Gray's *Turdus avensis*, which was originally named from an Indian drawing. According to Robinson,[94] the above four specimens are the only ones so far taken in the Malay Peninsula.

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[87] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 46, 1916.

[88] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 211, 1934.

[89] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 306, 1924.

[90] Proc. U. S. Nat. Mus., vol. 22, p. 319, 1900.

[91] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 306, 1924.

[92] Journ. Federated Malay States Mus., vol. 5, p. 56, 1914.

[93] Stray Feathers, vol. 8, p. 39, 1879.

[94] The birds of the Malay Peninsula, vol. 2, p. 232, 1928.

The species has a wide range, extending from southwestern Burma, through Peninsular Siam to the Malay States, Sumatra, Java, Borneo, the Sulu Islands, Basilan in the Philippines, Sumbawa, South Flores, Lombok, and Bali.

Besides the above specimen from Trang, I have handled only one other specimen—a female from Klumpang Bay, southeastern Borneo. The two specimens differ somewhat. The Bornean bird has the chin black instead of white and the inner primaries and outer secondaries have a wood-brown mark on each side of the shaft at the tip. These differences may be individual, however.

OREOCINCLA DAUMA DAUMA (Latham)

Turdus dauma LATHAM, Index ornithologicus, vol. 1, p. 362, 1790 (India).

One male and one female, Khun Tan, 3,000 feet, February 14 and 26, 1932; one female, Doi Hua Mot, August 28, 1934.

With the last-mentioned female a nest with three nestlings with the eyes unopened was taken. It is a large flat nest composed entirely of pine needles, except for a narrow rim of mud mixed with a little moss around the base to fasten it to the limb it was on. It was 10 feet from the ground in a tree. The nest cavity is very shallow, and the nest is very unthrushlike in appearance. The outside diameter of the nest is 8 inches; the egg cavity 4 inches wide and about 1 inch deep.

The three adult specimens are much lighter above and have the white tip to the outer tail feathers more extensive than in the next form (*socia*). They measure (male first): Wing, 143, 141, 145; culmen, 22, 23.5, 24 mm.

A male from western Kashmir, collected in July, is paler above than any of the Siamese specimens, but an unsexed specimen from Nepal is quite dark, a little darker even than the Siamese birds.

The range is, according to Stuart Baker, in summer the Himalayas from Hazara to Assam above 8,000 feet, the mountains of Tenasserim to northeastern Burma; to which may be added the mountains of northern Siam.

This species is similar to *O. aurea aurea* but is smaller, with only 12 rectrices. *O. aurea* has 14 rectrices, and the wing ranges in the male from 164 to 173 mm.

OREOCINCLA DAUMA SOCIA Thayer and Bangs

Oreocincla dauma socia THAYER and BANGS, Mem. Mus. Comp. Zool., vol. 40, no. 4, p. 174, 1912 (Tatscienlu, Szechwan, China).

Two males and one female, Doi Nangka, November 11 and 19, 1930.

These three specimens are darker and more heavily spotted with black above than the three birds previously listed as *dauma*. De

Schauensee[95] had previously recorded it from Doi Sutep, 4,500 feet, December 9.

It breeds in the mountains of western China and migrates to northern Siam, Tonkin, Annam, and Laos to winter.

OREOCINCLA HORSFIELDI AFFINIS Richmond

Oreocincla horsfieldi affinis Richmond, Proc. Biol. Soc. Washington, vol. 15, p. 158, 1902 (Kao Nok Ram, 3,000 feet, Trang, Peninsular Siam).

Turdus aureus angustirostris Gyldenstolpe, Orn. Monatsb., 1916, p. 28 (Koon Tan, northern Siam).

One male, Doi Nangka, November 3, 1900.

Dr. W. L. Abbott collected the type (a male), Kao Nok Ram, 3,000 feet, Trang, January 13, 1899.

Dr. Smith's specimen agrees almost perfectly with the type of *affinis*, except that the belly seems to be more extensively white. It measures: Wing, 139; culmen, 23 mm. The type of *affinis:* Wing, 143; culmen, 22 mm.

O. horsfieldi is a smaller bird than *aurea*, darker on the back, with the light markings on the inner webs of the outer tail feathers much reduced, especially on the outer feather. Five Chinese males of *aurea* have wings ranging from 164 to 173 mm. Both species have 14 rectrices. Three males and two females of *O. h. horsfieldi* of Java have culmens measuring from 26 to 28 (26.8) mm. This is considerably more than in the two males of *affinis* listed above, and for this reason I am keeping the two races separate.

The United States National Museum contains a female collected by C. Boden Kloss on the Langbian Peaks, southern Annam, April 26. It is somewhat darker than the type of *affinis* above. It measures: Wing, 149; culmen, 22.5 mm. The light markings on the outer tail feathers are almost obsolete. I can count only 12 rectrices, but it may have lost a pair. It was originally identified as *O. aureus angustirostris*, but it undoubtedly belongs to a form of *horsfieldi*. This led me to believe that *angustirostris* and *affinis* are one and the same. Count Gyldenstolpe compares the former with *horsfieldi*, of which it is a form, but *affinis* is an earlier name.

Robinson and Kloss[96] say they have specimens from Kao Ram and Kao Luang, 1,000–2,000 feet in Nakon Sritamarat that they regard as the same as the Javanese bird.

The range of *O. h. affinis* is hard to determine. *O. h. horsfieldi* may occur in the Malay States and *O. h. affinis* north of them in Peninsular Siam to the mountains of northern Siam and eastward to southeastern Annam.

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[95] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 543, 1930.

[96] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 308, 1924.

ZOOTHERA MARGINATA MARGINATA Blyth

Zoothera marginata Blyth, Journ. Asiat. Soc. Bengal, vol. 16, p. 141, 1847 (Arakan).

One male, Kao Ban Tad, Krat, December 22, 1929; one female, Kao Kuap, Krat, December 26, 1929; one female, Kao Sabap, November 14, 1933.

Kloss has taken this bird at Klong Yai, southeastern Siam, in winter, and Chasen and Kloss [97] have recorded it from the Raheng District, western Siam. Deignan [98] records one from Doi Sutep, 3,500 feet, August 29, 1931, and four from Doi Angka, 4,600–4,800 feet, September 5, 7, 1935.

This race occurs from Sikkim to eastern Assam, Burma, Tenasserim, Yunnan, and Siam. It is a mountain bird and apparently has not been recorded from Peninsular Siam.

A smaller race, *Z. m. parva*, has been described from Tonkin. A specimen from Dalat, southern Annam, in the United States National Museum apparently belongs to it. This specimen is a female and is smaller and more reddish above than in the females from Siam.

MONTICOLA RUFIVENTRIS (Jardine and Selby)

Petrocincla rufiventris Jardine and Selby, Illustrations of ornithology, vol. 3, pt. 9, pl. 129, 1833 (Himalayan District).

Three males, Khun Tan Mountains, 4,000 feet, November 23, 1928; one female, Doi Nangka, November 4, 1930.

This bird breeds in southern China in the mountains from Fukien to Yunnan and in the Himalayas from Burma and Assam west to Chamba, and south to northern Siam, Laos, and Tonkin.

In Siam there are few records. De Schauensee [99] took four specimens on Doi Sutep, 4,500–5,500 feet, in December; and on his third expedition [1] took a male at Chiengdao, 4,600 feet, January 11. Deignan [2] says it occurs on Doi Sutep in the cold weather. This implies that it is only a winter resident.

MONTICOLA SOLITARIA PHILIPPENSIS (Müller)

Turdus philippensis Müller, Natursystems, Suppl., p. 145, 1776 (Philippine Islands).

One female, Koh Chang, January 8, 1926.

The only reason for assigning this female to the above race is that it is paler than the females of *pandoo* and does not agree with them, but does agree with some specimens of *philippensis*. After examining the females of both forms, however, I have not yet found any satisfactory characters for separating this sex. The males present no difficulties. The male of *philippensis* has the breast, belly, and under wing coverts rufous.

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[97] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 178, 1928.

[98] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, pp. 65, 113, 1935–36.

[99] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 543, 1930.

[1] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 211, 1934.

[2] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 143, 1931.

Dr. W. L. Abbott took an adult female at Prahmon, Trang, March 7, 1896, and a male at Tanjong Badak, Tenasserim, January 6, 1900.

The present form breeds in northeastern China and winters in southeastern China, Tonkin, Laos, Annam, Cochinchina, Cambodia, Siam, Tenasserim, and the Philippine Islands.

The bulk of the population of this form winters and migrates to the eastward of Siam, and there are few authentic records for the country.

MONTICOLA SOLITARIA PANDOO (Sykes)

Petrocincla pandoo Sykes, Proc. Zool. Soc. London, 1832, p. 87 (Dukhun, India).

One male, Khun Tan Mountains, 4,000 feet, November 19, 1928; one male, Doi Angka, December 9, 1928; two males, Khun Tan, 4,000 feet, October 19, 1929, February 20, 1932; one female, Chiengmai, November 26, 1928; one male, Mekhan, February 6, 1932; one male, Ban Padieng, December 23, 1932; one male and one female, Bangkok, September 27 and October 20, 1923; one male, Meklong, January 26, 1924; one male, Nong Khor, Sriracha, November 9, 1926; one male, Pak Chong, November 16, 1929; one male and one female, Hin Lap, December 6, 12, 1931; one female, Kao Sabap, October 28, 1933.

The United States National Museum has received through Dr. W. L. Abbott from C. Boden Kloss one male, Koh Klum, December 17, 1914; three females, Koh Si Chang, January 26, 1915; and one female, Lat Bua Kao, October 1926

Dr. W. L. Abbott collected one male, Victoria Island, Tenasserim, December 4, 1903; one female, Victoria Point, Tenasserim, March 29, 1904; and one female, Bentinck Island, Mergui Archipelago, March 11, 1900.

All the males in the above series are a deep orient blue, with a variable amount of subterminal cross bars and lighter tips to the feathers, the remains of an immature plumage that probably wears off before the breeding season; not a single specimen has any trace of rufous below. In a considerable series of this form from western China (Yunnan, Szechwan, and Hupeh), there are only three specimens that have any rufous. Judged by the range given by Stuart Baker[3] this form should be *M. s. affinis*, but my specimens do not agree with the characters assigned to it, and I am following Hartert[4] and Lord Rothschild[4a] in assigning the Chinese and Siamese specimens of the solidly blue rock thrushes to *M. s. pandoo.*

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[3] The fauna of British India, Birds, ed. 2, vol. 1, p. 175, 1924.

[4] Die Vogel der paläarktischen Fauna, vol. 1, Heft 6, p. 675, 1910.

[4a] Nov. Zool., vol. 33, p. 257, 1926.

The form breeds in the mountains of northern India, Burma, Tibet, and western China and winters in southern India, Siam, southern China, Tonkin, Annam, Cochinchina, and Cambodia. It seems generally distributed over Siam proper in the winter and has been taken in Peninsular Siam as far south as Trang and Pulo Pandau and has been recorded from Perak.[5]

Lowe[6] has recorded *M. s. affinis* from 28 miles east of Umpang, Siam, but I have reached the conclusion that this name represents a phase of *M. s. pandoo* and is not a geographic form.

MONTICOLA GULARIS (Swinhoe)

Oroecetes gularis SWINHOE, Proc. Zool. Soc. London, 1862, p. 318, 1863 (near Tientsin, China).

Three males, Kao Sabap, Chantabun, January 7, 1930, November 2–25, 1933; one female, Chantabun, February 12, 1930; one male, Kao Kuap, Krat, December 27, 1929; one female, Kao Bantad, Krat, December 28, 1929; one male, Kao Seming, Krat, January 1, 1930.

This beautiful rock thrush breeds in northeastern China, Manchuria, northern Korea, and probably southeastern Siberia. It migrates through eastern China in fall and spring and winters in Tonkin, Annam, Cochinchina, Cambodia, and Siam, and as a straggler to Burma and Tenasserim.

Count Gyldenstolpe[7] recorded it as a very rare winter visitor to Siam, where at the time he wrote it had been recorded only twice, from Khun Tan and from Klong Menao. Robinson and Kloss[8] secured a single male at Nong Kok, Ghirbi, Peninsular Siam, January 5, 1918, and say that one is on record from the Perak Hills. De Schauensee[9] took a male at Chiengmai, 1,500 feet, January 17.

MYOPHONUS TEMMINCKII RILEYI Deignan

Myophonus caeruleus rileyi DEIGNAN, Proc. Biol. Soc. Washington, vol. 51, p. 25, 1938 (Doi Angka, Siam).

Two females, Doi Angka, 7,000 feet, December 6, 1928.

These two females do not agree with a small series from Kashmir; the blues are darker and less purplish.

This bird is not common in northern Siam where previously it had been obtained only in Khun Tan.[10]

This form was separated after this bulletin was in type and is known only from the above specimens.

This species can readily be distinguished from *eugenei* by having the feathers of the rump, flanks, and breast with white on the base along the shaft; from *crassirostris* by the slenderer, less heavy bill; from *caeruleus* by having the under mandible yellow.

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[5] Robinson and Kloss, Ibis, 1911, p. 64.

[6] Ibis, 1933, p. 271.

[7] Ibis, 1920, p. 478.

[8] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 112, 1919.

[9] Proc. Acad. Nat. Sci. Phila., vol. 86, p. 212, 1934.

[10] Ibis, 1920, p. 479.

Both *eugenei* and *temminckii* occur in northern Siam, the former being the commoner. Lord Rothschild says they occur together in the same areas.[11]

MYOPHONUS EUGENEI EUGENEI Hume

Myiophoneus eugenei Hume, Stray Feathers, vol. 1, p. 475, 1873 (Thayetmyo).
Myiophoneus stonei de Schauensee, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 469, 1929 (Chiengmai, northern Siam).

Two females, Doi Nangka, November 6, 1930, April 26, 1931; one male, Pang Meton (Doi Nangka), May 4, 1931; one male, Doi Sutep, February 3, 1932; one male, Mekhan, February 8, 1932; one male, Song Kwe Valley, January 20, 1933. All these localities are in northern Siam.

The United States National Museum possesses a good series of this species from the mountains of Yunnan and Szechwan, China; none was taken in the winter, however, and it may be that they migrate farther south after the breeding season. A series of seven males from China (Yunnan and Szechwan) are darker and duskier above than the series from Siam. The foreheads in the Siamese birds are an especially bright, shining, dark violet-blue, much darker and duskier in the Chinese series. A female collected by C. Boden Kloss at Koh Lak, southwestern Siam, November 16, is a lighter bluish violet than any in the northern Siam series.

The four males from Siam measure: Wing, 170–181 (176); tail, 116–135 (123.9); culmen, 28.5–35 (30.6) mm. Seven males from Yunnan and Szechwan: Wing, 168–189 (181.6); tail, 114–134 (127.4); culmen, 28–32.5 (30.2) mm.

This species evidently breeds in northern Siam, and Dr. Smith's birds would indicate that it is there also in winter, so it evidently does not migrate far if at all. The birds breeding in China may move south, possibly passing more to the eastward, or just move from the high elevations, where they breed, to the valleys to winter.

The species ranges from the mountains of Yunnan and western Szechwan, China, to eastern Burma, northern and southwestern Siam, east to Tonkin, Laos, Annam, and Cambodia.

De Schauensee[12] took a small series on his third expedition at Chiengmai, Chiengdao, Kengkoi, and the southern Shan States; with this additional material he finds that his *Myiophoneus stonei* is untenable.

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[11] Nov. Zool., vol. 33, p. 256, 1926.

[12] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 212, 1934.

MYOPHONUS CRASSIROSTRIS Robinson

Myiophoneus crassirostris Robinson, Bull. Brit. Orn. Club, vol. 25, p. 99, 1910 (Trang, Peninsular Siam).

Myophonus temminckii changensis Riley, Proc. Biol. Soc. Washington, vol. 41, p. 207, 1928 (Koh Chang, Siam).

One adult male, Koh Chang, January 6, 1926; one adult male, Kao Kuap, Krat, December 27, 1929; one female, Kao Sabap, November 18, 1933; one immature male, Kao Luang, 1,000 feeet, Nakon Sritamarat, July 23, 1928.

Dr. W. L. Abbott collected a male on Pulo Terutau, Langkawi Group, April 1, 1904.

The male from Kao Kuap is a lighter, more purplish bird than the Koh Chang male; both have white tips to the greater wing coverts.

The male collected by Dr. Abbott that I formerly took to represent typical *crassirostris* is a totally different-looking bird from either of the two above males. It is more of a dusky violet-blue, both above and below, and lacks the white tips to the greater wing coverts, but in describing *changensis* I overlooked the fact that in the original description *crassirostris* was also said to have white tips to the greater wing coverts. Now I think it best for the present to adopt Mr. Kloss's view [13] that the Terutau male may represent a plumage phase and place *changensis* in synonymy.

The type came from Trang, and it has been taken on Langkawi and Terutau; [14] Koh Muk (Pulo Muntia), Trang, and Pasir Raja (Pulo Lontar), southwestern Siam [15]; Nong Kok, Ghirbi, Peninsular Siam.[16]

This would give it a range from Trang, Peninsular Siam, to southeastern Siam.

The immature male from Kao Luang, mentioned above, is dusky slate-violet above without lighter tips to the feathers, and blackish below; the feathers of the breast with white shafts basally; the bill thick and heavy as in the adult.

The adult can be distinguished from *M. temminckii* by the thick heavy bill; from *eugenei* by the heavier bill and the white bases to the feathers of the breast and flanks.

MYOPHONUS CAERULEUS CAERULEUS (Scopoli)

Gracula caerulea Scopoli, Delicias florae et faunae insubricae, pt. 2, p. 88, 1786 (China).

One male and one female, Doi Angka, 6,500-7,000 feet, December 4 and 7, 1928; two females, Doi Nangka, November 5 and 9, 1930.

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[13] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 121, 1930.

[14] Robinson and Kloss, Ibis, 1911, p. 62.

[15] Robinson, Journ. Federated Malay States Mus., vol. 7, p. 178, 1917.

[16] Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 3, p. 110, 1919.

These specimens agree better with the form from southeastern China rather than the western form *immansuetus*. It is rather remarkable that northern Siam is the only place from which the United States National Museum has received the following three species of this genus: *temminckii*, *eugenei*, and *caeruleus*.

The range of the form is from northern Siam to southeastern China, Tonkin, Laos, Annam, and Cambodia. In Hupeh and Szechwan provinces of western China *M. c. immansuetus* Bangs and Penard occurs [17]; it has brighter, more shining blue tips to the feathers.

In northern Siam this is a comparatively rare bird, only a few records of captures being recorded. Count Gyldenstolpe [18] records it from Khun Tan; Chasen and Kloss [19] from Doi Sutep, 5,500 feet. De Schauensee [20] secured a male at Chiengdao, January 17.

It is easily distinguished from the other members of the genus occurring in Siam by its wholly black bill.

COCHOA VIRIDIS Hodgson

Cochoa viridis Hodgson, Journ. Asiat. Soc. Bengal, vol. 5, p. 359, 1836 (Nepal).

One immature male and one immature female, Khun Tan, October 23 and 26, 1929.

These were apparently the first specimens collected in Siam of this fine species, and were recorded by me.[21]

It ranges from the Himalayas to Burma, northern Siam, southern China, and south to Laos, Tonkin, and southern Annam. Though immature, both of these specimens have nearly acquired the adult plumage. The male has the pileum white barred with black and with a slight bluish wash; ear coverts and rictus white tipped with black; throat ochraceous-buff with dusky bars; jugulum with a few feathers ochraceous-orange tipped with black, and there are a few similar feathers scattered through the green of the breast and on the scapulars and hindneck; otherwise it is like the adult. The female is similar but lighter green below. It is acquiring a few cobalt-blue feathers on the crown.

The adult male is dark emerald-green, lighter green below; wings and tail black, the outer margins of the wing feathers basally, and the upper surface of the tail until near the tip, cadet blue; pileum a brighter blue; lores and a streak surrounding the eyes black; wing, 135–145 mm.

Stuart Baker [22] described *Cochoa rothschildi* from two specimens, one taken in Sikkim, the other in Manipur. He says that it differs from *viridis* in having the lowerparts almost entirely orange-brown; the ear coverts, sides of head, and cheeks are white, producing a demicollar on the sides of neck. M. Delacour [23] thinks this is a dimorphic phase likely to occur anywhere within the range of the species.

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[17] Occ. Papers Boston Soc. Nat. Hist., vol. 5, p. 147, 1925.

[18] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 61, 1916; Ibis, 1920, p. 479.

[19] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 245, 1932.

[20] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 212, 1934.

[21] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 157, 1933.

[22] The fauna of British India, Birds, ed. 2, vol. 2, p. 186, 1924.

De Schauensee [24] records two males taken at Chiengmai, 4,500–5,500 feet, July 8 and 21, and Deignan [25] a specimen taken at the same place on July 16, 1935.

Family SYLVIIDAE: Old World Warblers

ACROCEPHALUS ARUNDINACEUS ORIENTALIS (Temminck and Schlegel)

Salicaria turdina orientalis TEMMINCK and SCHLEGEL, *in* Siebold's Fauna Japonica, Aves, p. 50, pl. 20B, 1847 (Japan, Borneo, Makassar, and Sumatra).

One male and two females, Bangkok, September 21, 1933, September 23, 1924, and April 5, 1926; one female, Korat, February 14, 1929; one male, Chantabun, March 15, 1930.

This bird is not uncommon in winter apparently in the vicinity of Bangkok, as it has been reported from there by a number of collectors. Deignan [26] reports it locally common in winter in reed beds at Chiengmai and as leaving in March. De Schauensee [27] took specimens at Meklong, November 17; Hua Mak, December 17; Tap Chang, April 4; and Petriu, October 23. Robinson and Kloss [28] record two females from Namchut, Pakchan, February 24–26. Müller [29] took one on Salanga (Puket), February 28.

The form breeds in northern China, eastern Siberia, and Japan and migrates to southern China, Indo-China, Burma, Assam, Siam, the Malay States, Sumatra, Java, Borneo, and the Philippines to winter.

LOCUSTELLA CERTHIOLA (Pallas)

Motacilla certhiola PALLAS, Zoographia Rosso-Asiatica, vol. 1, p. 509, 1827 (beyond Lake Baical).

One immature female, Bangkok, September 21, 1923; one adult female, Meklong, January 5, 1924.

This species breeds in eastern Siberia and migrates to southern China, Indo-China, Assam, Burma, eastern Bengal, and Siam to winter.

Williamson [30] records it from Bangkok; Robinson and Kloss [31] from Kandhuli, Chaiya, Peninsular Siam, September 29, and Pulo Condore.[32] Apparently it is not a common winter visitor to Siam.

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[23] L'Oiseau, new ser., vol. 2, p. 435, 1932.

[24] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 212, 1934.

[25] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 114, 1936.

[26] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 148, 1931.

[27] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 228, 1934.

[28] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 319, 1924.

[29] Die Ornis der Insel Salanga, p. 10, 1882.

[30] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 197, 1915.

[31] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 318, 1924.

[32] Journ. Nat. Hist. Soc. Siam, vol. 4, p. 89, 1921.

Dr. Sushkin[33] has proposed dividing the species into a number of forms, but other ornithologists, with the exception of La Touche,[34] have not followed him. My material is not sufficient to go into the question.

LOCUSTELLA LANCEOLATA (Temminck)

Sylvia lanceolata TEMMINCK, Manuel d'ornithologie, ed. 2, vol. 4, p. 614, 1840 (Mainz, error; Russia).

One male, Koh Tao, off Bandon, December 29, 1926; one male, Muek Lek, April 27, 1933.

Dr. W. L. Abbott collected one male off the coast near Sungei Ujong, Straits of Malacca, November 5, 1900: one male, 10 miles south of Penang, Straits of Malacca, October 4, 1902 (both these birds flew aboard ship); and one unsexed, Victoria Point, Tenasserim, March 31, 1900.

This species breeds in northeastern Siberia and migrates to southern China, Indo-China, Siam, Burma, and the Malay States to winter.

Gyldenstolpe[35] records it from northern Siam. Deignan[36] took one at Chiengmai in February. Robinson and Kloss[37] took one in Trang and later[38] recorded a male from Namchut, Pakchan, February 26, and a female from Tasan, Chumporn, March 26. Aagaard took a female on Doi Sutep, 4,600 feet.[39]

Probably this warbler is a more regular winter visitor than the few winter records indicate.

DUMETICOLA THORACICA THORACICA Blyth

Dumeticola thoracica BLYTH, Journ. Asiat. Soc. Bengal, vol. 14, p. 584, 1846 (Nepal).

One male, Pang Meton (Doi Nangka), May 2, 1931.

This specimen is molting. It is not so russet a brown above, the superciliary is whiter, and below it is much less spotted on the jugulum than specimens from Yunnan. The lower mandible is yellowish, while in Yunnan birds the whole bill is black, but the latter are breeding birds. I hardly believe this male is the same form as *D. t. thoracica*, but it evidently belongs to this species and is placed here for the present.

Dr. Sushkin[40] has revised the species, but without adequate material it is difficult, if not impossible, to discriminate the forms.

It breeds in the Himalayas from Kashmir to Bhutan and in the mountains of Yunnan and Szechwan. Apparently it is nonmigratory.

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[33] Proc. Boston Soc. Nat. Hist., vol. 38, no. 1, pp. 44-47, 1925.

[34] A handbook of the birds of eastern China, vol. 1, pt. 3, pp. 218-224, 1926.

[35] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 167, 1915.

[36] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 148, 1931.

[37] Ibis, 1911, p. 66.

[38] Journ. Nat. Hist. Soc. Siam, vol. 5, 1924, p. 318.

[39] Chasen and Kloss, Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 245 ,1932.

[40] Proc. Boston Soc. Nat. Hist., vol. 38, no. 1, pp. 40-44, 1925.

ORTHOTOMUS SUTORIUS MACULICOLLIS Moore

Orthotomus maculicollis MOORE, Proc. Zool. Soc. London, 1854, p. 309, 1855 (Malacca).

Two males, Bangnara, Patani, July 13, 16, 1926; one immature female, Bukit, Patani, January 23, 1931; one male, Yala, Patani, January 31, 1931; one male, Pran, April 3, 1931; two males, Muang Kanburi, April 16, 1928; one male, Aranya, July 13, 1930; eight males, seven females, and one unsexed, Bangkok, May 22, 1923, February 28 and October 30, 1925, April 5–September 6, 1926, April 15–May 3, 1934; one female, Bung Borapet, March 21, 1933; one male, Nong Khor, near Sriracha, March 23, 1926; one male, Muek Lek, April 19, 1933; one male, Pak Chong, May 8, 1925; three males and one female, Ban Nam Kien, Nan, April 20, 22, 1930.

Dr. W. L. Abbott collected one female, Tyching, Trang, June 30, 1896; one male, the Dindings, Straits of Malacca, April 12, 1900; and a male and female, Tanjong Kalong, Singapore, June 9, 1900.

The small series from Peninsular Siam are slightly darker above than specimens from Siam proper, but the difference is slight and not worthy of being recognized by name. The only specimens examined from northern Siam are the three males and a female from Nan and these can hardly, if at all, be distinguished from Peninsular specimens. Some specimens from Siam proper have the cheeks and ear coverts unstreaked, but they all seem to be females, and I believe this to be more or less of a sexual character. All the males with long central feathers have streaked or grayish ear coverts. It is my belief that *O. s. patia* does not reach Siam at all, at least in its typical form, and all Siamese records had best be assigned to *maculicollis*.

This would make the range of the latter extend from Singapore northward through Peninsular Siam to northern Siam and eastward to Cambodia, Laos, Cochinchina, and southern Annam.

Herbert[41] states that it breeds around Bangkok from early in May to late in August, though June and early July is the most general time; he describes the nest and eggs.

Dr. Smith took an immature female at Bukit, Patani, January 23. It is about half grown, a pretty late date; possibly in the south the breeding season is irregular. This young bird resembles the female except that the pileum is light brownish olive, instead of bay with a grayish nape.

Apparently this is not a common bird in Peninsular Siam, becoming more abundant in the north. It is a common garden species around Bangkok and is resident where found.

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[41] Journ, Nat. Hist. Soc. Siam, vol. 6, p. 98, 1923.

ORTHOTOMUS ATROGULARIS ATROGULARIS Temminck

Orthotomus atrogularis TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 101, in text to pl. 599, 1836 (Malacca and Borneo).

One male, Bangnara, Patani, July 19, 1926; one male, Bukit, Patani, January 23, 1931; one male, Huey Yang, Nakon Sritamarat, October 1, 1930; one male and one female, Tha Lo, Bandon, September 27, 1931; seven males and one female, Pran, May 29, 1928, April 1, 3, 1931.

Dr. W. L. Abbott collected the following: Four males and three females, Trang (Prahmon, February 21–March 27, 1896; Trang, February 2, 1897; Kok Sai, December 28–29, 1898); two males and two females, Singapore Island, May 14–25, 1899; and one male, Helfer Island, Mergui Archipelago, March 5, 1900. He took a nest and three heavily incubated eggs in Trang May 29, 1896. He gives the soft parts as: Iris pale yellowish brown; upper mandible horn brown, lower mandible pale fleshy; feet brownish fleshy.

This series averages a darker green above than a series from eastern Siam and the pileum averages darker also, but the lower parts are not grayer. There seems to be no great difference in size between the two series. Ten adult males from the Malay Peninsula north to Pran measure: Wing, 43–48.5 (45); tail, 33–39 (35.9); culmen, 14.5–15.5 (15) mm. Ten adult males from central and eastern Siam: Wing, 42.5–45.5 (43.7); tail, 31–39 (36); culmen 13.5–15 (14.3) mm.

The largest specimens in the above series are from the south, and there is a gradual diminution northward. The specimens from Pran are intermediate but in color seem more nearly to match the southern form. Unfortunately, I have no adult specimens from southern Siam. It is quite possible that the specimens from central, southeastern, and eastern Siam are only intermediates and should really be placed with the Peninsular form.

O. a. atrogularis ranges from Singapore northward to Pran, southwestern Siam, and southern Tenasserim. It occurs throughout the Malay Peninsula, and has been recorded on Pulo Dayang Bunting, Pulo Langkawi, and Pulo Terutau,[42] Koh Samui, and Koh Pennan[43] by Robinson.

ORTHOTOMUS ATROGULARIS NITIDUS Hume

Orthotomus nitidus HUME, Stray Feathers, vol. 2, pp. 478, 507, 1874 (northern Tenasserim).

Two males, Muang Kanburi, April 8, 11, 1928; two males and a female, Bangkok, April 8, 1924, June 1, 2, 1926; two males, Aranya, July 12, 13, 1930; one male immature, Chiengdao, January 28, 1932; one male, Muang Pai, December 27, 1932; four males and one female, Pak Chong, May 8, 11, 1925, November 22, 29, 1929; one female, Lam Klong Lang, Pak Chong, June 15, 1925; one male, Hin Lap,

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[42] Journ. Federated Malay States Mus., vol. 7, p. 182, 1917.

[43] Journ. Federated Malay States Mus., vol. 5, p. 150, 1915.

September 30, 1932; one female, Ban Sadet, Sriracha, May 31, 1925; one male, Huey Yang, Sriracha, no date; one male, Lem Sing Mountain, Sriracha, June 8, 1926; one male, Kao Seming, Krat, October 10, 1928. Dr. Smith also took two females at Vientiane, Laos, February 20, 23, 1929.

Herbert [44] reports four nests found in the Bansakai fruit gardens in June and July, the nest and eggs similar to those of *O. sutorius maculicollis;* the note is quite different, however.

Stuart Baker [45] states that the young of *O. a. atrogularis* is like the female, but young birds of *O. a. nitidus* from Ban Sadet and Aranya have the pileum green like the back and are whiter below. The Ban Sadet specimen was taken May 31 and is over half grown; that from Aranya, taken July 12, is considerably older and there are a few cinnamon-rufous feathers coming in on the pileum. The Ban Sadet date would indicate a much earlier breeding date than those given by Herbert.

Kinnear [46] would lump the Peninsular bird with that of *nitidus*, and it must be admitted that there is not much difference between the two forms, but as the northern birds show some differences I am keeping them separate for the present.

The range of *O. a. nitidus* is Sikkim to eastern Assam, Burma, northern Tenasserim, northern, western, and eastern Siam, and eastward into Laos, Cochinchina, Annam, and Tonkin.

O. a. eumelas Oberholser occurs in Banka and possibly Sumatra; *O. a. humphreysi* Chasen and Kloss in northern Borneo.

ORTHOTOMUS SERICEUS HESPERIUS Oberholser

Orthotomus sericeus hesperius OBERHOLSER, U. S. Nat. Mus. Bull. 159, p. 89,1932 (Linga Island, Rhio Archipelago).
Orthotomus ruficeps AUTHORS, not of Lesson.

One male and one female, Bukit, Patani, January 25, 1931; one male, Patalung, July 8, 1929.

Dr. W. L. Abbott collected an immature male at Prahmon, Trang, April 8, 1896, and an immature male on Singapore Island, May 20, 1899.

The three specimens collected by Dr. Smith are adult, with mouse-gray backs, the pileum and tail light chestnut. There are three stages of the immature plumage represented in the series in the United States National Museum. An immature from Linga Island, taken July 22 (no. 170789), has the upperparts saccardo umber, the pileum with a slight rufescent tinge; tail fuscous, becoming blackish subterminally, with rufescent edges and tip; underparts primrose yellow. The next stage is the immature collected by Dr. Abbott in

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[44] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 99, 1923.

[45] The fauna of British India, Birds, ed. 2, vol. 2, p. 414, 1924.

[46] Ibis, 1921, p. 321.

Trang in which the upperparts become olive-brown, the forehead and superciliaries chestnut, the lowerparts cream-buff, the middle of the breast and belly white, the tail with more rufescent along the edges. The next stage is represented by a bird from Linga Island, taken July 20, which is much like the last except the whole pileum has become chestnut. The first fall plumage is like that of the adult but darker on the back and has a subterminal black bar on the central tail feathers and fuscous along the shaft. The two males collected by Dr. Smith have no black on the central tail feathers, but the female has.

If we may judge from the immature birds described above, there are no male adult specimens in the United States National Museum at present from Sumatra or the Rhio Archipelago except the type. The specimens from there are darker above than the adults collected by Dr. Smith, but this I believe is the result of their being not fully mature. The type of *hesperius* is in worn plumage, and this may account for its darker color. It is quite possible, though, that the mainland specimens may represent a different form.

The form ranges from southern Tenasserim south through Peninsular Siam to Singapore, Sumatra, and the Rhio Archipelago.

In Peninsular Siam there are few records; it seems to be commoner farther south.

Robinson and Kloss [47] record it from Chong, Trang; Robinson [48] from near Ban Kok Klap, Bandon; Baker [49] from Maprit; Robinson and Kloss [50] from Tasan, Chumporn. The last seem to be the most northern record for Siam.

A closely related form, *O. s. sericeus* Temminck, occurs in Borneo.

ORTHOTOMUS RUFICEPS RUFICEPS (Lesson)

Edela ruficeps Lesson, Traité d'ornithologie, p. 309, 1831 (Australia, error: Malacca).

Orthotomus cineraceus Blyth, 1845, and authors.

Two males, Nakon Sritamarat, September 16, 21, 1926.

These are the only two mainland specimens of this form examined by me.

This has been generally given as a race of *Orthotomus sepium* of Java, but that species is deep olive above, instead of gray, and yellowish below, only the foreneck gray. *O. r. ruficeps* also is said to occur in Java,[51] but this would hardly be the case if they were races.

Williamson has a female in his collection also from Nakon Sritamarat, taken November 23, which Robinson and Kloss state is the farthest north that it has been taken in the Peninsula.[52]

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[47] Ibis, 1911, p. 66.

[48] Journ. Federated Malay States Mus., vol. 5, p. 108, 1915.

[49] Journ Nat. Hist. Soc. Siam, vol. 3, p. 200, 1919.

[50] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 321, 1924.

[51] Bartels and Stresemann, Treubia, vol. 11, p. 133, 1929; Kuroda, Birds of Java, vol. 1, p. 244, 1933.

Stuart Baker [53] gives its range as southern Tenasserim and Siam to Singapore; Cochinchina; Java (Bartels and Stresemann); and Sumatra.

A form occurs in Borneo and two or more on islands off the west coast of Sumatra, and there is a specimen from Cagayan Sulu in the United States National Museum. It is darker and has a deeper reddish head than either the Bornean or mainland form and has been named *O. c. cagayanensis* Riley.

CISTICOLA JUNCIDIS MALAYA Lynes

Cisticola juncidis malaya Lynes, Ibis, 1930, *Cisticola* Supplement, p. 92 (Klang, Malay Peninsula).

Two adult females and one immature female, Bangkok, October 3, 1923, October 23, 1925, August 3, 1926; one female, Bung Borapet, June 21, 1932; one male, Ban Ton, Udon, February 26, 1929.

Dr. W. L. Abbott collected a male on the Dindings, Straits of Malacca, April 12, 1900.

Herbert [54] says it is exceedingly common in central Siam, nesting in the paddy fields. He has seen as many as 30 nests in one morning. The nesting season is from early in May, if the rains are good, to the end of August, and sporadically throughout the year. Deignan [55] states that it is common in ricefields at Chiengmai during the rains, rare and local at other seasons. De Schauensee [56] records a male from Hua Mak, March 17; Baker [57] gives the additional localities of Samkok, Sansep, and Muek Lek.

I have not examined any specimens from northern Siam. It is quite possible that birds from there may be *C. j. cursitans*.

Lynes gives the range as Lower Burma, Siam, Malay Peninsula, Nicobars, Sumatra, and western Java.

FRANKLINIA GRACILIS (Franklin)

Prinia gracilis Franklin, Proc. Zool. Soc. London, 1831, p. 119 (Ganges or Vindijian Hills).

One male, Pang Meton (Doi Nangka), May 2, 1931; one male, Khun Tan, 4,500 feet, February 20, 1932; one female, Chiengmai, November 26, 1928; one female, Muang Kanburi, April 15, 1928; one female, Korat, February 14, 1929.

The fall- and winter-taken birds are quite different from those of summer. The male from Pang Meton is deep mouse gray on the pileum and hindneck without a superciliary, becoming a light olive-brown on the back; lowerparts are grayish white, with a broad neutral gray band across the chest. The Chiengmai female is light buffy brown on the pileum, superciliary and cheeks light gray; back darker than the pileum, with a rufescent tinge; lowerparts whitish, flanks cream-buff. The male from Khun Tan is darker on the pileum and more rufescent on the back than the above female amd more of a gray on the throat. The two females at the bottom of the list are whiter below than the Chiengmai female, and there is only a supraloral streak, very narrow and ill-defined, in the April bird.

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[52] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 322, 1924.

[53] The fauna of British India, Birds, ed. 2, vol. 2, p. 416, 1924.

[54] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 100, 1923.

[55] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 149, 1931.

[56] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 228, 1934.

[57] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 200, 1919.

An adult male from the Yangtze Gorge, Yunnan, collected May 17, has a much longer tail than the adult male from Pang Meton. In plumage the two are similar. The Pang Meton male measures: Wing, 44; tail, 42 mm. The Yunnan male: Wing, 49; tail, 51 mm. Both specimens are without a superciliary. The females are considerably smaller than the males.

The species ranges pretty much all over India, Assam, Burma, Tenasserim, Siam proper, Yunnan, and Indo-China.

Deignan[58] reports it common in the brush along ricefields at Chiengmai. De Schauensee[59] took specimens at Chiengdao, Chiengmai, and Sriracha, and says that it is found up to 5,000 feet in northern Siam.

FRANKLINIA RUFESCENS RUFESCENS (Blyth)

Prinia rufescens Blyth, Journ. Asiat. Soc. Bengal, vol. 16, p. 456, 1847 (Arracan).
Prinia beavani Walden, Proc. Zool. Soc. London, 1866, p. 55 (Schouay Goon, Salwin River, Tenasserim).

Two adult males and one immature male, Bangnara, Patani, July 13, 14, 1926; one male, Bukit, Patani, January 26, 1931; one immature male, Kao Luang, Nakon Sritamarat, July 17, 1928; two males, Sriracha, April 19, 20, 1934; one immature male and one female, Nong Mong, Muang Krabin, August 23, 1925; one female, Sakeo, near Krabin, May 2, 1928; one female, Tha Chang, March 2, 1927; four males, Pak Chong, May 7, 18, 1925, April 29 and May 9, 1926; one male, Lat Bua Kao, August 6, 1929; one unsexed and one immature, Doi Hua Mot, August 29, 1934; two males, Khun Tan, 4,500 feet, October 18, 1929 and February 25, 1932.

Dr. W. L. Abbott collected one adult male, three adult females, and one immature female in Trang (Prahmon, February 24, 1896; Lay Song Hong, November 23, 1896; Trang, January 20–February 12, 1897). He describes the soft parts as: Iris pale yellowish brown; bill black, pale fleshy beneath; feet pale brownish fleshy, claws pale horn brown.

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[58] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 149, 1931.
[59] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 229, 1934.

The Peninsular specimens are slightly darker above than those from eastern Siam, but the difference is very slight. There seems to be no difference in size. Nine males from northern and eastern Siam measure: Wing, 42–45.5 (43); tail, 39–51 (41.8); culmen, 12–12.5 (12.2) mm. Four males from Peninsular Siam: Wing, 40.5–44 (42.5); tail, 41–45 (42.9); culmen, 12–12.5 (12.2).

A young female about half grown, taken by Dr. Abbott at Prahmon, Trang, February 24, resembles the winter adult above; the breast is tinged with primrose yellow; the flanks are chamois; otherwise like the parent.

Dr. Smith secured three older young, about adult size, but still with the yellow tinge to the breast. They were taken at Bangnara, July 13, Kao Luang, July 17; and Nong Mong, August 23. He also took a young bird, slightly younger than the one taken by Dr. Abbott at Doi Hua Mot, August 29. It is deeper yellow on the breast than Dr. Abbott's specimens and the bill is smaller and lighter colored.

The form ranges from the Malay States through Peninsular Siam to western, northern, and eastern Siam, Tenasserim, Burma, Yunnan, and southern Annam. It has been taken pretty much all over Siam, including the Peninsular section, and seems to be resident wherever found.

De Schauensee,[60] in commenting on a series from Chiengmai and Chiengdao, says that it is found up to 5,500 feet where there is long grass. Herbert[61] records it breeding at Bangkok and Samkok in July and describes the eggs.

It must breed very early in the Peninsula, as witnessed by the young collected by Dr. Abbott cited above, though a slightly younger bird was taken by Dr. Smith in August.

MEGALURUS PALUSTRIS ANDREWSI Bangs

Megalurus palustris andrewsi Bangs, Bull. Amer. Mus. Nat. Hist., vol. 44, p. 592, 1921 (Menting, Burma border).

Two males, Bung Borapet, June 21, 1931, March 25, 1933; two males Rangsit, May 5, 1929.

These specimens are larger than the only Javan male with which they have been compared. This seems to be the only constant character. A series from the Philippines in size is nearer the Javan form than that from the mainland. One male from Java measures: Wing, 95.5; culmen, 17 mm. Ten males from the Philippines: Wing, 97–102 (98.8); culmen, 16.5–18.5 (17.8) mm. Four males from Siam: Wing, 100–105.5 (102.6); culmen, 18–20 (19.2) mm.

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[60] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 229, 1934.

[61] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 106, 1923.

The present race ranges from Bengal to Assam, Burma, Yunnan, Siam, Tonkin, Annam, Laos, and Cambodia.

Williamson [62] records it from Samkok, 35 miles north of Bangkok; Bangkok; Klong Rangsit, 15 miles north of Bangkok; and Paknampo. Herbert [63] reports it from Samkok, Ayuthia, Paknampo, and also along the Petrieu line as well as Ban Yang, central Siam. It was not common and breeds in the last half of June or early in July. He gives a description of the nest and eggs. Deignan [64] found one at Chiengmai in February and later recorded others in January and February.

M. p. palustris Horsfield is found in Java and Bali. *M. p. forbesi* Bangs is confined to the Philippines.

The mainland race is widely separated from that of Java by several hundred miles of country where the species is not known to occur. It is apparently sedentary.

PHRAGMATICOLA AEDON (Pallas)

Muscicapa aedon Pallas, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, p. 695, 1776 (Dauria).

One male, Nan, April 14, 1930; one female, Ta Pra, Korat, February 16, 1929; one female, Pak Chong, February 8, 1925.

Williamson [65] records it from Bangkok; Gyldenstolpe [66] from Den Chai, and on his second expedition he took it at Khun Tan on April 28, Sop Tue on April 24, and Koh Lak on January 28 [67]; Robinson and Kloss secured two males at Nong Kok, Ghirbi, January 1 and 11[68]; Baker records it from Maprit [69]; Deignan [70] shot one at Chiengmai in February and another in March. De Schauensee [71] secured it at Tamuang, March 9; Chiengmai, December 20 and February 1, Bangkok, April 24, Bua Yai, January 5. Robinson and Kloss [72] record a female from Namchut, Pakchan, February 25 and three males and two females from Koh Lak, April 4–10. There is also in the United States National Museum a female, taken by C. Boden Kloss on Koh Sichang, January 26, 1915.

The species breeds in southeastern Siberia, Manchuria, and northern China and migrates for the winter to Indo-China, Siam, Burma, and eastern Bengal.

Superficially it closely resembles *Acrocephalus arundinaceus orientalis*, but the bill is shorter and the first primary is longer, broader, and quite differently shaped. The wing is shorter. *P. aedon* also closely resembles *Horornis canturians* but has not the light superciliary, the first primary shorter (about 21 mm); third and fourth primaries are nearly equal and longest instead of the fourth and fifth; and the feet are dusky (skin) instead of light brownish, probably flesh color in life.

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[62] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 19, 1918.

[63] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 104, 1923.

[64] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 149, 1931; vol. 10, p. 115, 1936.

[65] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 86, 1914.

[66] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 29, 1913.

[67] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 43, 1916.

[68] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 113, 1919.

[69] Ibid., p. 201.

[70] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 149, 1931.

[71] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 229, 1934.

[72] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 320, 1924.

HERBIVOCULA SCHWARZI (Radde)

Sylvia schwarzi Radde, Reisen im Süden von Ost-Siberien, Vogel, p. 260, pl. 9, 1863 (Tarei Nor).

One male, Chiengmai (Doi Sutep), December 13, 1928; two females, Lampang, November 17, 1928; one male, Doi Nangka, November 16, 1930.

The only two specimens available for comparison are a male, from Tientsin, China, May 21, and a male from North Kirin, Manchuria, September 4. Both specimens are primrose yellow on the breast, the chest, flanks, and under tail coverts cinnamon-buff; the throat white. The Doi Sutep male has the breast white and the buff on the flanks, chest, and under tail coverts is much lighter; the upperparts also are much lighter.

The two females from Lampang are similar in color to the males from China and Manchuria but are somewhat smaller and the throats are creamy buff. The male from Doi Nangka has the yellow on the breast very light; the lowerparts are mostly creamy buff.

The wing in the male from Manchuria measures 64.5 mm; that of the male from Tientsin 65; the male from Chiengmai 63; the male from Doi Nangka 56. Two females from Lampang have wing measurements of 54 and 56 mm.

Unfortunately I am unacquainted with the plumages of this species. The yellow-breasted specimens are probably birds of the year.

In plumage the yellow-breasted birds closely resemble *Oreopneuste armandi*, but the bill is heavier and the superciliary is more of a cinnamon-buff and more conspicuous.

The species breeds in eastern Siberia from Lake Baical to Sachalin Island and migrates south to winter in southern China, Indo-China, northern Siam, Tenasserim, and Pegu.

De Schauensee [73] took a male at Merim, January 18, and on his third expedition a small series at Nakon Nayok, November 21; Chiengmai, December, January, and February 1; Sriracha, February 7; Bua Yai, January 11 and Chiengdao, January 17. He says this bird was usually found in lowland scrub on Doi Sutep as high as 2,500 feet and on Chiengdao at 4,600 feet.[74]

Deignan [75] says it is not an uncommon winter visitor in the Chiengmai region from December 23 to April 2.

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[73] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 555, 1930.

[74] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 229, 1934.

[75] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 116, 1936.

This species seems to be a rare bird in collections and very little is known of its habits.

PHAEORADINA SUBAFFINIS (Ogilvie-Grant)

Phylloscopus subaffinis OGILVIE-GRANT, Bull. Brit. Orn. Club, vol. 10, p. 37, 1900 (Puanting, Kweichu, China).

One female, Doi Nangka, November 13, 1930.

This species breeds in western Szechwan, western Yunnan, and Kweichow, China, and has been taken in Tonkin, northern Laos, Annam, and northern Siam. It is a mountain bird and probably resident where found.

There seems to be no other record from Siam.

PHAEORADINA FUSCATA FUSCATA (Blyth)

Phyllopneuste fuscata BLYTH, Journ. Asiat. Soc. Bengal, vol. 11, p. 113, 1842 (Calcutta).

One male and one unsexed, Muang Kanburi, April 8, 15, 1928; three males, Bangkok, April 8, 1924, December 28, 1925, and April 15, 1934; one female, Meklong, January 26, 1924; one male, Ban Nam Kien, Nan, April 22, 1930.

This form breeds in eastern Siberia and migrates south through China to winter in India, Burma, Siam, and Indo-China.

Gyldenstolpe [76] took it at Khun Tan, April 30, and Sop Tue, April 24; Deignan [77] states that it is common at Chiengmai from October until March. Kloss [78] secured a female at Lat Bua Kao; de Schauensee [79] a small series at Bangkok, November 2, April 24, Tap Chang, April 28, and Hua Mak, April 19. Robinson and Kloss [80] record it from Koh Lak, April 2, and state that Williamson has three specimens taken in December at Koh Lak and Nong Kae, which seem to be about the limit of its wintering ground in this direction.

Stresemann [81] has named a form from Sungpan, Szechwan, *Phylloscopus fuscatus robustus*, and Sushkin [82] one from the Altai *Oreopneuste fuscata altaica*. Possibly both of these forms may occur in Siam in winter. I have never handled a specimen of either.

PHYLLOSCOPUS PULCHER PULCHER Blyth

Phylloscopus pulcher BLYTH, Journ. Asiat. Soc. Bengal, vol. 14, p. 592, 1845 (Nepal).

One male, Doi Sutep (summit), December 15, 1928.

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[76] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 45, 1916.

[77] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 149, 1931.

[78] Ibis, 1918, p. 212.

[79] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 229, 1934.

[80] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 324, 1924.

[81] Abh. Ber. Mus. für Tierk. Volkerk. Dresden, vol. 16, no. 2, p. 16, 1924.

[82] List and distribution of birds of the Russian Atlai and nearest parts of NW Mongolia, p. 73, 1925.

This agrees with specimens from western Szechwan and western Yunnan; no specimens from Nepal have been available for comparison.

This form breeds in the mountains of Szechwan and Yunnan, China, Nepal, Assam, Tonkin, and Siam. It is probably resident where found. Apparently there are no other Siamese records.

PHYLLOSCOPUS INORNATUS INORNATUS (Blyth)

Regulus inornatus Blyth, Journ. Asiat. Soc. Bengal, vol. 11, p. 191, 1842 (locality unknown).

One male, Doi Sutep (summit), December 14, 1928; one unsexed, Doi Angka, 4,000 feet, December 3, 1928; one male and one female, Doi Nangka, November 3, 10, 1930; one male, Khun Tan, February 27, 1932; one male and one female, Bangkok, January 19 and February 8, 1924; one female, King Pai, Korat, February 16, 1929; one male, Amphar Klong, Chantabun, January 4, 1930.

Dr. W. L. Abbott took two males in Trang (Kao Nom Plu, 3,000 feet, February 24, 1897; Trang, January 19, 1899).

A winter visitor to Siam occurring practically all over the country and down the Peninsula as far as Perak. It breeds in northeastern Siberia.

The pair from Doi Nangka are tinged with yellow below, more so than any others in the series; they also have greener backs.

PHYLLOSCOPUS BOREALIS BOREALIS (Blasius)

Phyllopneuste borealis Blasius, Naumannia, 1858, p. 313 (Ockhotskan Sea).

One male and one female, Koh Tao, September 22, 26, 1928; two males, Bo Ploi, Kanburi, September 8, 1928; two males and two females, Bangkok, May 7, 1923, May 2, 1924, September 23, 1930, May 14, 1934; one male, Huey Yang, October 1, 1930; one male, Hin Lap, September 30, 1932; one male, Muang Krat, October 19, 1928; one male, Kao Seming, Krat, October 13, 1928.

Dr. W. L. Abbott collected the following: One male and one female, Trang, February 5, 6, 1897; two males, Pulo Langkawi, December 8, 1899; one female, Pulo Adang, Butang Islands, December 17, 1899; three males, one female, and one unsexed, Mergui Archipelago (Chance Island, December 29, 31, 1899; Domel Island, February 24, 27, 1900; one male, St. Matthew, December 9, 1900); one female, Victoria Island, Tenasserim, January 5, 1900.

This species is readily distinguished from the other members of the genus by the minute first primary.

The form nests in northern Europe and northern Asia, and migrates to Assam, Burma, Siam, Indo-China, the Malay States, Greater Sunda Islands, and the Philippines to winter.

In Siam it has been taken practically all over the country and down the Peninsula to Patani. It has also been taken on many of the islands off the coast. Robinson[83] records it from Koh Samui, May 15, and Koh Pennan, May 30; and Langkawi, Terutau, and Butang[84]; Robinson and Kloss[85] from Junkseylon; Robinson[86] from Koh Kut.

PHYLLOSCOPUS NITIDUS PLUMBEITARSUS Swinhoe

Phylloscopus plumbeitarsus SWINHOE, Ibis, 1861, p. 330 (between Taku and Peking, China).

One male, Prae, April 26, 1930; one male, Sriracha, April 20, 1934; one male, Pak Chong, April 10, 1929; one male, Muang Pai, December 27, 1932; two females, Chiengmai, November 25, 1928; one female, Ban Nam Kien, Nan, April 20, 1930; two males, Mae Hong Sorn, January 4, 9, 1933.

Gyldenstolpe[87] states that it is very common during winter in both eastern and northern Siam; and on his second expedition[88] he secured two males at Koh Lak, December 14 and 17; de Schauensee[89] took it at Chiengmai, December 22, January 26, 29; Tung Sio, January 27, and Chantabun, March 24; Robinson and Kloss[90] doubtfully identify specimens as of this form from Tapli, Pakchan, March 4–7, Tasan, Chumporn, March 21, Koh Lak, April 3–8.

The specimens taken by Dr. Smith agree with some from North China and Manchuria. *P. n. nitidus* of the Caucasus is quite a different-looking form, lighter, more yellowish green above and quite yellow below. *P. n. plumbeitarsus* is grayish white below with only faint yellowish streaks. *P. n. viridanus* of western Siberia, etc., of which I have examined specimens only from Kashmir (not typical) closely resembles *P. n. plumbeitarsus*, but the back has a grayish cast, and the wing bar to the greater coverts is lacking entirely or very faint; in the latter the greater wing bar is conspicuous, and generally the lesser wing bar is present also, though faint.

P. n. plumbeitarsus breeds in Transbaicalia and migrates south through China to Indo-China, and Siam to winter.

Stuart Baker[91] has named a form from Daban, southern Annam, *Acanthopneuste nitidus saturatus*, which is said to breed in Manchuria and winter in Annam, Yunnan, and the northern Shan States. If this form is recognizable, the form wintering in Siam may belong to it. I have not examined authentic specimens, however.

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[83] Journ. Federated Malay States Mus., vol. 5, p. 150, 1915.

[84] Journ. Federated Malay States Mus., vol. 7, p. 183, 1917.

[85] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 113, 1919.

[86] Ibis, 1915, p. 754.

[87] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 29, 1913.

[88] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 45, 1916.

[89] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 230, 1934.

[90] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 326, 1924.

[91] Bull. Brit. Orn. Club, vol. 44, p. 62, 1924.

PHYLLOSCOPUS OCCIPITALIS CORONATUS (Temminck and Schlegel)

Ficedula coronata TEMMINCK and SCHLEGEL, *in* Siebold's Fauna Japonica, Aves, p. 48, pl. 18, 1847 (Japan).

One male, Bo Ploi, Kanburi, September 26, 1929; one female, Pran, April 1, 1931; one male, Koh Tao, off Bandon, September 27, 1928; one male and one female, Kao Soi Dao, Trang, December 30, 31, 1933.

Dr. W. L. Abbott collected four males and two females in Trang (Lay Song Hong, December 20, 28, 1896; Kao Nom Plu, 2,000 feet. March 3, 1897; Kao Nok Ram, 1,000 feet, January 17, 1899; Trang, January 29, 1897).

This series agrees with specimens from North China and Korea.

The form breeds in eastern Siberia, Korea, and Japan and migrates south to Indo-China, Siam, Tenasserim, the Malay States, and Java to winter.

Evidently *P. o. coronatus* is a common winter visitor to all parts of Siam and migrates farther south than most of the birds of this genus visiting the country.

PHYLLOSCOPUS REGULOIDES REGULOIDES (Blyth)

Phyllopneuste reguloides BLYTH, Journ. Asiat. Soc. Bengal, vol. 11, p. 191, 1842 (Darjeeling?, India).

Two males, Khun Tan, October 27, 1929, February 22, 1932.

These two specimens belong to a form whiter below than *P. r. claudiae;* it is what has passed by authors as *Phylloscopus trochiloides* (Sundevall), but Count Gyldenstolpe [92] has shown that *Acanthiza trochiloides* Sundevall really applies to the species known to authors as *Phylloscopus lugubris.*

Stuart Baker [93] gives the range as breeding from Afghanistan frontier through Gilgit and Kashmir to Garhwal, Nepal, Sikkim, and Tibet. It winters in Bengal, Assam, Burma, to Tenasserim.

The United States National Museum has a male of this form from the mountains of Shensi, a male from Hupeh, and a male from Kweichow; the two latter are migrants. I have examined only one specimen from Nepal. It is slightly more yellowish below than the others mentioned but is close to them. If the two Siamese specimens do not belong to it, I do not know where else to place them.

PHYLLOSCOPUS REGULOIDES CLAUDIAE (La Touche)

Acanthopneuste trochiloides claudiae LA TOUCHE, Bull. Brit. Orn. Club, vol. 43, p. 22, 1922 (Mengtz, Yunnan).

One male, Khun Tan, February 22, 1932.

This specimen agrees fairly well with a series of birds from the mountains of western Szechwan and western Yunnan. A small number from this series were sent the late Outram Bangs to compare with La Touche's type, and he reported that they agreed with it. The United States National Museum contains specimens of the form from as far north as Wenchwan, Szechwan.

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[92] Bull. Brit. Orn. Club, vol. 46, p. 47, 1925.

[93] The fauna of British India, Birds, ed. 2, vol. 2, p. 481, 1924.

It breeds in the high mountains of western Szechwan and western Yunnan and migrates south in winter to Indo-China and northern Siam.

PHYLLOSCOPUS FLAVO-OLIVACEUS FLAVO-OLIVACEUS Hume

Phylloscopus (*Reguloides*) *flavo-olivaceus* HUME, Stray Feathers, vol. 5, p. 504, 1877 (Mount Muleyit, Tenasserim).

Acanthopneuste davisoni OATES, The fauna of British India, vol. 1, p. 420, 1889 (same type specimen [94]).

One female, Doi Sutep, December, 1928; one male and one female, Doi Nangka, November 3, 19, 1930; three males and two females, Doi Hua Mot, August 27–29, 1934; one male, Kao Kuap, Krat, December 26, 1929.

This species has a light yellow coronal streak, and the inner web of the outer tail feather is entirely white.

The wing in five males measures 50–55 (52.5) mm; in four females, 50–53.5 (50.2) mm.

The species has been divided into three forms: *P. f. ogilvie-granti*, southeastern China; *P. f. klossi*, Langbian Peaks, southern Annam; and *P. f. flavo-olivaceus*.

The range of the present form, so far as known, is Tenasserim, southern Shan States, Lichiang Range, Yunnan, northern and southeastern Siam, and Tonkin. It is a mountain bird and is probably resident where found.

De Schauensee [95] collected it on Doi Sutep, 4,800 feet, December 7, and on his third expedition [96] at Chiengdao, January 19, and Chiengmai, February 3, 5, and March 2, between 5,000–6,000 feet.

PHYLLOSCOPUS TENELLIPES Swinhoe

Phylloscopus tenellipes SWINHOE, Ibis, 1860, p. 53 (Amoy, China).

One male, Nong Khor, near Sriracha, September 25, 1925; one male, Kao Sabap, November 1, 1933.

Dr. W. L. Abbott took an adult (not sexed) on High Island, Mergui Archipelago, December 30, 1900.

Robinson and Kloss [97] record it from Chong, Trang; Robinson [98] from Koh Chang and Koh Kut; Gyldenstolpe [99] from Den Chai,

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[94] Kinnear, Ibis, 1929, p. 316.

[95] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 555, 1930.

[96] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 231, 1934.

[97] Ibis, 1911, p. 65.

[98] Ibis, 1915, p. 755.

[99] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 46, 1916.

February 8; Kloss[1] from Lat Bua Kao and Koh Lak; Robinson and Kloss[2] from Tapli, Pakchan, March 11, Hat Sanuk, April 18, and state that Williamson has examples from Nong Kae and Langsuen taken in November and January; de Schauensee[3] took a single specimen at Chiengmai, 5,000 feet, February 27.

This species breeds in Amurland and migrates south late in summer through China to Indo-China, Burma, Siam, and the Malay States to winter.

It is easily distinguished from the other members of the genus wintering in Siam by having a yellowish supercilium, by the brownish head with only a slight greenish tinge, the more brownish (saccardo olive) back, the rump with a slight russet tinge, the feet in the skin are light colored.

SEICERCUS BURKII TEPHROCEPHALUS (Anderson)

Culicipeta tephrocephalus ANDERSON, Proc. Zool. Soc. London, 1871, p. 213 (Bhamo, Burma).

One male, Khun Tan, 3,000 feet, February 26, 1932; one male, Muang Pai, December 28, 1932.

I am not sure that these two specimens belong to one and the same race; the Muang Pai male has the back a brighter, more yellowish warbler green; the coronal median stripe broader and a lighter gray; and the lowerparts a slightly brighter yellow. If not this race, however, I do not know what to call it. The wing in the Khun Tan male measures 56; in that from Muang Pai, 51.5 mm.

The form breeds in the mountains of Burma from the Chin Hills to the Shan States; in winter it migrates to northern Siam, Laos, northern Annam, and Cambodia. In Siam it has not been recorded often.

Gyldenstolpe[4] records it from Kao Plyng, January 27, and on his second trip to Siam he secured it at Khun Tan, September 9.[5] De Schauensee[6] took it at Doi Sutep, 4,500 feet, December 7 and 28, and at Chiengsen, January 8 and 10; and on his third expedition he secured a small series from the following localities: Chiengmai, Khun Tan, Chieng Dao, and French bank of the Mekong opposite Chiengsen, December 20 to March 2.[7] Deignan states that it occurs at Chiengmai and Doi Sutep at 2,000–3,500 feet from October to April.

SEICERCUS BURKII INTERMEDIUS (La Touche)

Cryptolopha intermedia LA TOUCHE, Bull. Brit. Orn. Club, vol. 7, p. 37, 1898 (Fohkien, China).

One male, Kao Sabap, November 26, 1933.

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[1] Ibis, 1918, p. 212.

[2] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 324, 1924.

[3] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 230, 1934.

[4] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 30, 1913.

[5] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 82, 1916.

[6] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 546, 1930.

[7] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 231, 1934.

This specimen differs from the previous form (*tephrocephalus*) in having the forehead warbler green, the white spot on the second outer tail feather less extensive, and the eye ring broken above. No material has been available for comparison, but the specimen agrees with La Touche's description.[8] It measures: Wing, 52.5; tail, 38; culmen, 9 mm.

If correctly identified, it is an addition to the Siamese list.

The form breeds in the mountains of southeastern China (Fohkien) and migrates to southern China (Kwangtung), Tonkin, Lower Laos, and North Annam for the winter; it has been taken also in southeastern Yunnan in migration.

SEICERCUS CASTANICEPS CASTANICEPS (Blyth)

Abrornis castaniceps Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 593, 1845 (Nepal).

One male, Doi Nangka, April 22, 1931.

This specimen, the first record for Siam, was recorded by me in 1933.[9] I know of no subsequent records.

The form ranges from Nepal, Sikkim, and Annam to Manipur, Chin, and Kachin Hills, Burma, and south to the northern and southern Shan States and northern Siam. It belongs to a nonmigratory species.

In the mountains of southern China and northern Tonkin, *S. c. sinensis* (Rickett) is found; in the mountains of southern Annam, *S. c. annamensis* (Robinson and Kloss) occurs, and recently Delacour [10] has described a form from southern Laos; all four forms are widely separated.

ABROSCOPUS SUPERCILIARIS SUPERCILIARIS (Blyth)

Abrornis superciliaris Blyth ("Tickell" MS.), Journ. Asiat. Soc. Bengal, vol. 28, p. 414, 1859 (Tenasserim).

Abrornis superciliaris salwinensis Baker, Bull. Brit. Orn. Club, vol. 44, p. 62, 1924 (Salwin).

One male, Khun Tan, October 20, 1929.

This form ranges from the hills of Assam south of the Bramaputra, Burma, Yunnan, and northern Tenasserim to Northern Siam and southward to Bandon in Peninsular Siam.

Gyldenstolpe [11] records it from Meh Lem; and later [12] from Khun Tan, Doi Par Sakeng, and Pak Koh. Deignan [13] recorded it once on Doi Sutep, 3,500 feet, in July, and states it is common on many nearby mountains. Lowe[14] records it 40 miles east of Umpang. Robinson and Kloss[15] record it from Tapli and Tasan and state that its range extends south as far as Bandon, Peninsular Siam, and call attention to the fact that the northern bird should probably be known as *A. s. flaviventris* (Jerdon).

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[8] A handbook of the birds of eastern China, vol. 1, pt. 3, p. 257, 1926; pt. 5, p. 483, 1930.

[9] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 157, 1933.

[10] L'Oiseau, new ser., vol. 2, p. 423, 1932.

[11] Kungl. Svenska Vet.-Akad. Handl., vol 5.0, no. 8, p. 30, 1913.

[12] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 82, 1916.

[13] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 150, 1931.

ABROSCOPUS SUPERCILIARIS SCHWANERI (Blyth)

Abrornis schwaneri Blyth, Ibis, 1870, p. 169 (Borneo).

Dr. W. L. Abbott took a single male on Kao Soi Dao, 2,000 feet, Trang, February 11, 1899. He records the color of the feet as pale brownish olive.

This specimen agrees with three unsexed specimens from Mount Kina Balu, Borneo, and a pair from Selangor. The form differs from *A. s. superciliaris* principally in having the center of the breast white and averaging somewhat larger. It measures: Wing, 51; tail, 36; culmen, 10.5 mm. The only sexed female in the series of the United States National Museum measures: Wing, 45; tail, 32; culmen, 10.5 mm. This would indicate that the female is smaller than the male and that the unsexed Kina Balu specimens are males as they are large. This being the case, five males in the United States National Museum from Trang (1), Selangor (1), and Borneo (3) measure: Wing, 51–55 (52.8); tail, 36–42 (39.8); culmen, 10–11 (10.6) mm.

This form ranges from Borneo to Sumatra, the Malay States, and northward through Peninsular Siam to Trang and possibly somewhat farther north. It is rather uncertain just what form occurs between Trang and Bandon.

ABROSCOPUS ALBOGULARIS ALBOGULARIS (Moore)

Abrornis albogularis Moore, Proc. Zool. Soc. London, 1854, p. 106 (Nepal).

One male, Pang Meton (Doi Nangka), May 2, 1931; one female, Doi Hua Mot, August 14, 1934.

The male from Pang Meton was apparently the first record for Siam.[16] Subsequently the female was taken.

The form ranges from Nepal, Sikkim, and Assam to Manipur, the Chin Hills, and northern Siam. In southern and western China, Tonkin, and upper Laos, *A. a. fulvifacies* (Swinhoe) occurs.

HORORNIS CANTURIANS CANTURIANS (Swinhoe)

Arudinax canturians Swinhoe, Ibis, 1860, p. 52 (Amoy, China).

Dr. Smith took an adult male at Vientiane, Laos, February 21, 1929.

Apparently there are no records for Siam at present, but as it has been taken on the opposite side of the Mekong, it will undoubtedly be taken eventually in Siam.

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[14] Ibis, 1933, p. 277.

[15] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 243, 1924.

[16] Riley, Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 158, 1933.

It is hard to believe that this species belongs in the genus *Horornis* (type *H. fortipes* Hodgson), but I leave it here for the present as warbler genera are much involved. That it is only a form of *H. cantans*, as some authors claim, is pushing the form group too far. The latter is quite different in size and color. *H. canturians* is peculiar in another respect. There is a great difference in the size of the sexes, the female being so much smaller than the male that it had been treated formerly as a distinct species.

The form breeds in the Lower Yangtze Valley, China, and migrates to southern China and Indo-China to winter.

H. c. borealis (Campbell) breeds in eastern Siberia, Korea, and Manchuria and winters farther south. Possibly it reaches Siam.

PHYLLERGATES CUCULLATUS THAIS Robinson and Kloss

Phyllergates cucullatus thais Robinson and Kloss, Journ. Federated Malay States Mus., vol. 11, pt. 1, p. 56, 1923 (Kao Luang, 5,000–5,800 feet, Nakon Sritamarat, Peninsular Siam).

One male, Kao Luang, Nakon Sritamarat, 4,000 feet, July 20, 1928.

Dr. W. L. Abbott collected two males and one female, Kao Nom Plu, 3,000 feet, Trang, February 22–March 3, 1897. He describes the soft parts: Iris dark brown; upper mandible horn brown, lower mandible pale horn brown; feet pale fleshy brown.

The above series compared with a pair of *P. c. cucullatus* from Java have the center of the breast more broadly white and the bills smaller. The culmen in the Javan male measures 16; in the female, 15 mm. The culmens in the three Peninsular Siam males measure 13.5, 14, 14; in the female, 13.5 mm.

A single female of *P. c. coronatus* from Assam compared with *P. c. thais* is lighter on the back, has the gray neck collar lighter and narrower, the hazel of the head extending farther onto the nape, and the white of the center of breast narrower. The culmen measures 15.5 mm.

Robinson and Kloss [17] state that the bird occurring in the Malay States agrees with that of Borneo and is *P. c. cinereicollis* Sharpe. No specimens of the latter have been available to me for comparison.

P. c. thais is known only from the two Peninsular Siam localities cited above, but it probably occurs on some of the other mountains of the Peninsula.

SUYA SUPERCILIARIS SUPERCILIARIS Anderson

Suya superciliaris Anderson, Proc. Zool. Soc. London, 1871, p. 212 (Momein=Tengyueh, Yunnan).

One female, Doi Nangka, April 25, 1931; one male, Doi Hua Mot, August 12, 1934.

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[17] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 323, 1924.

The Doi Nangka specimen is molting. It is darker and less fulvous above, the head inclining more to grayish; below it is whiter and less buffy than a male from Yunnan taken in March. The latter has a much longer tail. The Nangka bird is smaller, but this is probably due to the difference in sex. The male taken at Doi Hua Mot has the chest streaked with black, more so than any specimen of the species examined by me.

Deignan[18] records it from Doi Sutep, 4,500 feet to summit. De Schauensee[19] collected it both at Chiengdao and Chiengmai and states that it is common in clearings on the mountains.

This form ranges from Yunnan south through Burma to Tenasserim and northern Siam and east through southern China to Tonkin and Laos. A closely related form, *S. s. klossi* Hachisuka, occurs in southern Annam and Cochinchina.

SUYA CRINIGERA COOKI Harington

Suya crinigera cooki Harington, Bull. Brit. Orn. Club, vol. 31, p. 109, 1913 (Thayetmyo).

One unsexed, Chantuk, June 12, 1934.

Kloss took five specimens at Lat Bua Kao, four of which he recorded as *Prinia inornata blanfordi*.[20] Two of these were sent to the United States National Museum. They are in very worn plumage and do not belong to the genus *Prinia* at all, but to *Suya*. They are fall-taken birds and are close to, if not identical with, a spring-taken pair from Dran, southern Annam, identified by Robinson and Kloss as of this race. The unsexed bird from Chantuk is grayer above and the streaks darker and better defined than the Lat Bua Kao specimens; the bill is black in the former, brown in the latter in the skin.

The form ranges from the Shan States, Burma, to Thayetmyo, eastern Siam, Yunnan, Cambodia, southern Laos, and southern Annam.

The species has been divided into a number of forms.

PRINIA FLAVIVENTRIS FLAVIVENTRIS (Delessert)

Orthotomus flaviventris Delessert, Rev. Zool., p. 101, 1840 (Boltan ou Boutan).

One female, Bangnara, Patani, July 19, 1926; two males and one female, Nakon Sritamarat, September 21, 24, 1926; one male and one female, Bung Borapet, July 1, 1932; also a set of three eggs at the latter place and date.

Dr. W. L. Abbott collected the following: Two males, Tyching, Trang, July 4, 1896; three males, the Dindings, Straits of Malacca, April 12, 14, 1900; one male, Tanjong Kalong, Singapore, July 8,

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[18] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 150, 1931.

[19] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 231, 1934.

[20] Ibis, 1918, p. 211.

1900; three males, Trengganu, 1900 (Tanjong, Dungun, September 21; Dungun River, September 24; Kemamun River, October 1). He gives the soft parts as: Iris yellowish brown or pale reddish brown; bill black; feet pale orange fleshy. In the young male taken at Tanjong Dungun, Trengganu, September 21, the soft parts are given as: Iris whitish brown; bill yellow horn, culmen brown; feet brownish yellow.

With only two males from central Siam to compare with Peninsular specimens it is impossible to tell whether the southern birds are the same or not. In plumage there is apparently no material difference, but the bills of the two northern males seem to be somewhat shorter and less heavy.

In some specimens the superciliary streak is well-marked; in others it seems to be altogether lacking. To this I can offer no explanation.

A young male taken by Dr. Smith at Nakon Sritamarat, September 24, and a young male taken by Dr. Abbott at Tanjong Dungun, Trengganu, September 21, differ from the adult male as follows: Pileum and upper parts buffy citrine, inclining to olive on the head; tail with a grayish tinge along the shaft, dusky subterminally, and tipped with light yellow; superciliary, interrupted eye ring, cheeks, and lower parts amber-yellow. The two birds are about adult size.

This form extends from Nepal east to Assam, eastern Bengal, Burma, Siam, and the Malay Peninsula to Singapore, Sumatra, Java, and Indo-China. It is probably resident where found.

Williamson [21] reports it from Muek Lek, eastern Siam. Herbert [22] found it breeding around Bangkok and Samkok in July and collected eggs, which he describes. Deignan [23] noted a few at Chiengmai in February 1931.

Since the above was written, Chasen [24] has recognized the Malay Peninsula, Sumatra, and Java populations of this species as *P. f. rafflesi* Tweeddale.[25] It is most likely that all the above Siamese records belong to it, except those from the north.

PRINIA BLYTHI HERBERTI Baker

Prinia inornata herberti Baker, Bull. Brit. Orn. Club, vol. 38, p. 39, 1918 (Bangkok, Siam).

Five males and five females, Bangkok, September 21, 1923, October 30, 1925, May 25–June 3, 1926, September 4, 1926, April 30 and May 8, 1934; three males, Bung Borapet, June 25, 1932, March 21, 1933.

This series agrees with the original description. In my opinion it is not a form of *inornata* at all, but of *Prinia blythi* of Java, which should not be in the same form group. The latter is a larger and much darker bird above than *P. i. inornata*, with a much more pronounced superciliary; the subterminal dark spot on the outer tail feathers is larger and darker. The bill in *blythi* is longer than in *P. i. inornata* and not so straight; the feet in the former are larger and heavier.

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[21] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 59, 1916.

[22] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 106, 1923.

[23] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 150, 1931.

[24] Bull. Raffles Mus., no. 11, p. 255, 1935.

[25] *Prinia rafflesi* Tweeddale, Ibis, 1877, p. 311, pl. 6, fig. 1 (Lampongs, south Sumatra).

P. b. herberti is dark above like *blythi* and has the same long bill and strong feet; the principal difference is the smaller size of *herberti*. The latter is more of a grayish brown above, however, not quite so russet. The base of the bill is light colored in the skin, only the tip black.

Six males of *P. b. herberti* measure: Wing, 47.5–55 (51.3); tail, 52–70 (58.9); culmen, 12–13 (12.6) mm. Five females: Wing, 45–54.5 (49.9); tail, 53–61 (55.4); culmen, 11.5–12.5 (12) mm.

This form was first recorded by Williamson [26] from Bangkok as *Prinia blanfordi*. Baker [27] in commenting on his types from Bangkok and Samkok adds Pak Chong, eastern Siam. Herbert [28] found it very common in the vicinity of Bangkok and states that it has a long breeding season, extending from April to October, though the latter part of May to the end of September is the regular season; he describes the nest and eggs. De Schauensee [29] took a male at Tap Chang, February 28.

So far as known at present, this form is known only from southern and eastern Siam to Cambodia, Laos, Cochinchina, and Annam.

PRINIA EXTER Thayer and Bangs

Prinia inornata exter Thayer and Bangs, Mem. Mus. Comp. Zool., vol. 40, no. 4, p. 182, pl. 5, figs. 4, 5, 1912 (Hokow, Szechwan).

One male, Nan, April 13, 1930.

This is the first record of this warbler for Siam. Hitherto it has been found only in western Szechwan and Yunnan. In either summer or winter plumage it is so different from *Prinia inornata* that in my opinion it should not be placed in the same form group.

The United States National Museum possesses a fair series of this species in both summer and winter plumage from western Szechwan. The above Siamese male matches the summer plumage perfectly. To aid students in recognizing this species, a brief description is given:

Summer plumage: Above light brownish olive, slightly darker on the head; below buffy white, the belly deep colonial buff; a light buffy superciliary; auriculars mixed buffy and light brownish olive;

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[26] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 88, 1914.

[27] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 203, 1919.

[28] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 105, 1923.

[29] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 231, 1934.

wings darker than the back, the remiges slightly edged with cinnamon; middle tail feathers the color of the back, outer feathers lighter and with a small brownish-olive subterminal spot, all the feathers narrowly tipped with light buff; thighs and bend of wing cinnamon-buff or deep colonial buff.

Winter plumage: Snuff brown above; clay color beneath; center of belly with a slight deep colonial-buff tinge, sometimes absent; tail darker than the back, much longer than in summer plumage, but with the same pattern.

The Nan male measures: Wing, 45; culmen, 11 mm. Two breeding males from Szechwan: Wing, 46–47; culmen, 11–11.5 mm.

Breeding specimens of *P. exter* might be taken for immature *flaviventris*, but the immature of the latter is entirely yellow below and otherwise different. The bill in *flaviventris* is longer and in the breeding season black; *exter* in the breeding season has the base of the bill light colored, only the tip black in the skin.

The above record extends the range from western Szechwan and western Yunnan to northern Siam.

Family MUSCICAPIDAE: Old World Flycatchers

HEMICHELIDON SIBIRICA SIBIRICA (Gmelin)

Muscicapa sibirica GMELIN, Systema naturae, vol. 1, pt. 2, p. 936, 1789 (near Lake Baical, eastern Siberia, and Kamtschatka).

One female, Kao Sabap, November 16, 1933; one female, Doi Hua Mot, August 20, 1934.

The female from Kao Sabap is very dark on the back but is not so dark below as *rothschildi;* wing, 80 mm. I have examined a fall specimen from Korea of *sibirica* that is just as dark.

De Schauensee[30] records a male from Nakon Nayok, October 30; on his third expedition[31] he took a female at Petrieu, October 22. Robinson and Kloss[32] state that some form of this species is common in the Straits of Malacca or the mountains of the Malay States between November and April and that the majority seem to belong to this form.

The form breeds in northeast Siberia and migrates through China to Indo-China, Siam, and the Malay States.

HEMICHELIDON SIBIRICA ROTHSCHILDI Baker

Hemichelidon sibirica rothschildi BAKER, Bull. Brit. Orn. Club, vol. 43, p. 156, 1923 (Lickiang Range, Yunnan).

Dr. W. L. Abbott collected a single male six miles south of Boyces Point, Tenasserim, February 17, 1904.

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[30] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 544, 1930.

[31] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 213, 1934.

[32] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 228, 1924.

This specimen agrees with a series of breeding birds of this form from the mountains of Yunnan and western Szechwan, and I think that it is this form rather than *fuliginosa* that occasionally is taken in Siam in the winter months. It is a darker bird than *sibirica*, with a longer first primary. I have examined only one unsexed specimen of *fuliginosa*, and it is certainly very close to *rothschildi* and seems to be only slightly browner above.

Robinson and Kloss[33] state that a male from Victoria Point, Tenasserim, and a male from Tasan, Chumporn, Peninsular Siam, in their series of *sibirica*, may belong to *fuliginosa*, as well as three young birds presumably from the same localities and Junkseylon Island. *H. s. fuliginosa* has been recorded from Chong, Trang; Kao Ram, Nakon Sritamarat; and 28 miles east of Umpang.

The form breeds in the mountains of Szechwan as far as Sungpan and the Likiang Mountains of Yunnan; in winter it has been taken as far south in Peninsular Siam as Junkseylon (Puket).

HEMICHELIDON FERRUGINEA Hodgson

Hemichelidon ferruginea HODGSON, Proc. Zool. Soc. London, 1845, p. 32 (Nepal).

One male and one female, Kao Sabap, October 24 and November 18, 1933.

Herbert[34] first recorded this bird for Siam but gave no definite locality. Later, Baker,[35] in going over Herbert's collection, gave the locality as Tung Song, Peninsular Siam. Robinson[36] records it from Pulau Adang, Butang Islands, and Pulau Paya, near Kuala, Kedah, and says that it is common in the high mountains of the Malay Peninsula in the cold season from October to March. Robinson and Kloss[37] record a specimen from Kao Luang, 2,000 feet, Nakon Sritamarat, and later they repeat this record.[38]

Under the name *H. cinereiceps*, Rodgers and Deignan[39] record a male taken on Doi Angka, 4,500 feet, April 13, 1931; later Deignan[40] took a female on the same mountain, September 1, 1935.

The species breeds in the Himalayas east to eastern Assam, the hills of northern Burma, Yunnan, and southwest Szechwan. In winter it migrates south to the Malay Peninsula, Indo-China, the Philippines, and Borneo.

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[33] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 227, 1924.

[34] Journ. Nat. Hist. Soc. Siam, vol. 2. p. 58, 1916.

[35] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 213, 1919.

[36] Journ. Federated Malay States Mus., vol. 7, p. 168, 1917.

[37] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923.

[38] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 229. 1924.

[39] Proc. Biol. Soc. Washington, vol. 47, p. 92, 1934.

[40] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 10, p. 65, 1935.

ARIZELOMYIA LATIROSTRIS LATIROSTRIS (Raffles)

Muscicapa latirostris RAFFLES, Trans. Linn. Soc. London, vol. 13, p. 312, 1822 (Sumatra).

Alseonax latirostris siamensis GYLDENSTOLPE, Orn. Monatsb., 1916, p. 27 (Bang Hue Pong, northern Siam).

One male and two females, Koh Chang, April 4, 1924, January 4 and 8, 1926; two females, Kao Seming, Krat, October 10, 1928, and January 2, 1930; one female, Kao Sabap, November 4, 1933; six males and three females, Bangkok, October 20, April 6, 1926, April 11–28, 1934; one male, Chiengmai, November 25, 1928; one male and one female, Ban Nam Kien, Nan, April 18–22, 1930; two males, Nong Yang, November 7, 1931; one male, Bukit, Patani, January 25, 1931.

Dr. W. L. Abbott collected the following specimens: One male and four females, Trang, January 20, 21, and February 5, 1897, February 23 and March 4, 1899; one male and one female, Pulo Lankawi, December 4, 9, 1899; two males, Mergui Archipelago (Domel Island, February 24, 1900; Hastings Island, December 11, 1900).

In the considerable series of this species in the United States National Museum there is a male (no. 278528) taken at Dran, South Annam, at 3,000 feet, May 10, 1918, by C. Boden Kloss. It is in worn breeding plumage and is drab above rather than the hair brown of the majority of the series; below the pectoral band is indicated only by a few drab streaks; bill larger. It measures: Wing, 71; tail, 47.5; culmen, 12 mm. Possibly there may be a resident form in the mountains of South Annam.

A. l. latirostris breeds in east Siberia west to Lake Baical and in the northern Japanese Islands; in fall it migrates through southern China, Indo-China, and Siam to the Greater Sunda Islands and some of the Philippines. It occurs practically all over Siam in winter and down Peninsular Siam to the Malay States. Apparently it remains in Siam until rather late in spring, as Dr. Smith took it at Bangkok as late as April 28; it is very doubtful whether it remains to breed.

SIPHIA PARVA ALBICILLA (Pallas)

Muscicapa albicilla PALLAS, Zoographia Rosso-Asiatica, vol. 1, p. 462, 1811 (Dauria).

One female, Ban Kang, December 1, 1928; one male, Doi Angka, 2,000 feet, December 8, 1928; one female, Prae, April 11, 1930; three males, Bangkok, February 2, 1924, April 3, 1926, April 11, 1934; two males, Pak Chong, November 27, 29, 1929; one male and one female, Pran, April 1, 3, 1931; one male, Petchabun, February 14, 1934.

Robinson and Kloss [41] record this form from Mamok, Pakchan and Tasan, Chumporn, Peninsular Siam, which seems to be the southernmost record in this direction; otherwise it has been recorded as a winter visitor practically all over Siam.

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[41] Journ. Siam Soc. Nat. Hist., vol. 5, p. 230, 1924.

It breeds in eastern Siberia and migrates south to winter in India, Siam, and French Indo-China.

SIPHIA STROPHIATA STROPHIATA Hodgson

Siphia strophiata HODGSON, Indian Rev., vol. 1, p. 651, 1837 (Nepal).

One male, Khun Tan Mountains, November 22, 1928; one male, Doi Angka, 5,000–6,000 feet, December 7, 1928.

De Schauensee[42] found it quite common in December on Doi Sutep, 4,500 feet, and Deignan[43] reports it from the same mountain at 4,500 to 5,500 feet in winter. De Schauensee[44] on his third expedition took specimens at Chiengdao in January and Chiengmai in February.

The form breeds in the Himalayas and the high mountains of western China and winters in Tenasserim, northern Siam, Laos, Tonkin, and northern Annam.

In south Annam, at the Langbian Peaks, a more reddish-backed, grayer-throated form, *S. s. fuscogularis*, is found, which has been recorded from the northern Shan States; if this record is reliable, it possibly may occur on the high mountains of Siam as a breeding bird.

CYORNIS CONCRETA CONCRETA (S. Müller)

Muscicapa concreta S. MÜLLER, Tijdschr. Nat. Gesch. Phys., vol. 2, p. 351, 1835 (Sumatra).

One male, Kao Soi Dao, Trang, December 30, 1933.

Dr. W. L. Abbott took an adult male at Kao Soi Dao, 1,000 feet, Trang, February 15, 1899.

These two specimens seem to be the only records for Siam. Farther south in the Malay States it is widely distributed but nowhere common. The males from Trang agree with a male from the Semangko Pass, Selangor-Pahang boundary.

This form ranges from the mountains of Sumatra to the Malay States and Peninsular Siam.

Farther north in Tenasserim *C. c. cyanea* occurs. It is a darker blue with the white on the breast more restricted.

C. c. concreta is a dark-blue bird with a white breast, the second, third, and fourth tail feathers largely white on the inner web. The female is brown, with a white crescent on the chest. Wing in male, about 88 mm.

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[42] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 545, 1930.

[43] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 144, 1931.

[44] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 213, 1934.

CYORNIS HAINANA (Ogilvie-Grant)

Siphia hainana Ogilvie-Grant, Bull. Brit. Orn. Club, vol. 10, p. 361, 1900 (Five Finger Mountains, Hainan).

One female, Nong Khor, November 22, 1924; one male and one female, Pak Chong, November 15, 18, 1925; one female, Tha Chang, near Pak Chong, November 23, 1925; two males and two females, Kao Seming, Krat, October 15, 16, 1928, January 1, 1930; three males, Kao Sabap, October 25-November 1, 1933; one female, Khun Tan, 4,000 feet, February 19, 1932; one male and one female, Khun Tan Mountains, 3,000 feet, May 10, 1933; one immature male (marked female), Nakon Sritamarat, March 13, 1929.

Dr. W. L. Abbott took a single female at Bok Pyin, Tenasserim, February 11, 1900.

The males of this form are easily discriminated from the other species of the genus. They are a dark tyrian blue above and on the throat and chest; breast, belly, and under tail coverts white; forehead, superciliaries, and bend of wing are a lighter, brighter blue than the back; lores black. The female is brown above, the tail and tail coverts rusty; throat and chest ochraceous-orange; breast, belly, and under tail coverts white.

Four males from Siam measure: Wing, 70–72 (71); tail, 56–59 (57.5); culmen, 11.5–12 (11.9) mm. Six females: Wing, 63–67 (65.4); tail, 50–55.5 (51.7); culmen, 11–12 (11.2) mm.

The female collected by Dr. Abbott in Tenasserim and one of Dr. Smith's females from Kao Seming (no. 311181) have one or more feathers in the upper tail coverts and the outer margins of the retrices tinged with blue. I presume they are really immature males.

The range of this form is South China (Kwangtung, Kwangsi, Hainan), Tonkin, Laos, North Annam, Cambodia, Siam, Tenasserim, and Peninsular Siam as far south as Nakon Sritamarat and Trang.

Besides the localities in Siam where Dr. Smith took specimens, it has been taken by Count Gyldenstolpe at Pak Koh (northern Siam) and by Kloss at Lat Bua Kao and Klong Menao, in eastern Siam.[45] De Schauensee [46] took specimens at Nakon Nayok and Chiengmai.

Dr. Smith's specimen from Nakon Sritamarat is an immature. There is a blue band across the forehead; the head is storm gray; the back is buffy brown with a grayish cast; the upper tail coverts and tail are snuff brown; lores and ring around the eye clay color; throat and chest buffy mixed with clay color in patches, with two or three dark blue feathers appearing on the chest; wings fuscous, the flight feathers lightly bordered outwardly with snuff brown; belly and under tail coverts white. Wing, 67.5; culmen, 11.5 mm. This is quite different from any female in the series, and I presume it is an immature male and not a female as marked. If correctly allocated it differs from the majority of the species of the genus in having an intermediate plumage; most of the species molt from the spotted plumage of the young directly into the blue of the adult male. This seems to be the first record of the form for Peninsular Siam.

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[45] Ibis, 1920, p. 577.

[46] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 214, 1934.

CYORNIS TICKELLIAE SUMATRENSIS (Sharpe)

Siphia sumatrensis SHARPE, Catalogue of the birds in the British Museum, vol. 4, p. 451, 1879 (Sumatra).

Cyornis rufigastra indochina CHASEN and KLOSS, Bull. Brit. Orn. Club, vol. 48, p. 73, 1928 (Daban, South Annam); Bull. Raffles Mus., no. 2, p. 35, pl. 1, 1929.

Two males and three females, Bangnara, Patani, May 23, 1924, July 14–16, 1926; one female (marked male), Yala, Patani, February 1, 1931; one male, Kao Luang, Nakon Sritamarat, October 6, 1930; two males, Sichol, Bandon, May 21, 22, 1930; one male, Koh Lak, June 22, 1933; one female, Sam Roi Yot, November 11, 1932; two males and one female, Muang Kanburi, April 9–12, 1928; four males, Pak Chong, March 1, 1924, May 8–18, 1925; one immature male, Lam Klong Lang, Pak Chong, June 15, 1925; one male, Pak Sok, August 18, 1926; two males, Nong Khor, near Sriracha, September 22, 1925, March 21, 1926; one male, Bung Borapet, July 1, 1932; one male, Chomtong, November 30, 1928; two males, Knong Phra, Pak Chong, April 15–16, 1929; one male, Ban Mekok, October 20, 1932.

Dr. W. L. Abbott took two males and a female in Trang, February 15 and January 23, 1897, and January 21, 1899.

In this species the male is dark tyrian blue above, the superciliaries and forehead lighter blue; lores blackish; throat and chest ochraceous-orange; breast and belly white; the dark blue of the cheeks is continued across the chin in a very narrow line, in some specimens hardly noticeable. Female a lighter blue above, lores whitish; chest and throat like the male; breast and belly white; cheeks lighter blue than the back, and this sometimes continued across the chin as a very narrow line. The male is much like the same sex in the *rubeculoides* group, but the latter is rather a darker blue, and the blue extends from the chin onto the throat and from the sides of the neck onto the sides of throat and chest, leaving the ochraceous-orange throat and chest as a V-shaped wedge; the blue comes down from the chin for about 11 mm; in *sumatrensis* it is only about 4 mm or less. Ten males measure: Wing, 65–71 (67.9); culmen, 10.5–12 (11.5) mm.

This form ranges over all Siam, and in the Malay Peninsula as far south as Malacca, southern French Laos, Cochinchina, southern Annam, and Sumatra.

De Schauensee[47] records specimens from Bua Yai, Chiengmai, Keng Koi, under the name *Muscicapula tickelliae indochina*; the female from Konken, with only the tail washed with blue, most likely belongs to some other form; he also records it from Tamuang and Sriracha under *Muscicapula tickelliae sumatrensis*,[48] but whether these two nominal races are synonymous I do not know. Certainly I have seen no female of *C. tickelliae sumatrensis* that is as bright above as depicted upon the plate by Chasen and Kloss cited above, but I have not examined any specimens from the Malay States. The females that I have called *sumatrensis* are more like the Chasen and Kloss's figure of *indochina*.

Stresemann and de Schauensee[49] have examined the type of *C. rubeculoides chersonesites* Oberholser and pronounced it an aberrant *sumatrensis*, but I hardly believe this is the correct solution. The type of *chersonesites* is darker than *sumatrensis*, and the dark blue of the cheeks extends onto the throat and occupies more space on the chin, leaving the russet of the chest to extend forward in a narrow wedge-shaped line; the chest is much darker. It most certainly belongs to the *rubeculoides* group of forms, and it is close to if not identical with *glaucicomans*.

CYORNIS RUBECULOIDES GLAUCICOMANS Thayer and Bangs

Cyornis tickelliae glaucicomans THAYER and BANGS, Bull. Mus. Comp. Zool., vol. 52, p. 141, 1909 (Tanswioyah, Hupeh, China).

Cyornis rubeculoides chersonesites OBERHOLSER, Proc. Biol. Soc. Washington, vol. 33, p. 85, 1920 (Trang, Peninsular Siam).

Cyornis anak ROBINSON and KLOSS, Journ. Federated Malay States Mus., vol. 10, p. 261, 1922 (Trang, Peninsular Siam).

One male Tha Lo, Bandon, September 22, 1931.

Dr. W. L. Abbott collected an adult male at Lay Song Hong, Trang, November 11, 1896, and the type of *chersonesites* at Trang, February 15, 1897.

These specimens have been compared with a small series of poorly prepared skins of *glaucicomans* from Szechwan with which they agree fairly well, except the type of *chersonesites*, which is lighter blue above, but below it agrees. In Szechwan specimens the blue does not extend down the chin so far as it does in the three Peninsular Siamese specimens.

Robinson and Kinnear[50] give the range of this form as Hupeh, Szechwan, and Yunnan, China, apparently wintering in the Malay Peninsula. They also record it from Ayuthia, Koh Lak, and Trang in their list of specimens under the form.

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[47] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 215, 1934.

[48] Ibid., p. 216.

[49] Proc. Acad. Nat. Sci. Philadelphia, vol. 88, p. 341, 1936.

[50] Nov. Zool., vol. 34, p. 234, 1928.

CYORNIS RUBECULOIDES DIALILAEMA Salvadori

Cyornis dialilaema Salvadori, Ann. Mus. Civ. Storia Nat. Genoa, ser. 2, vol. 7, p. 387, 1889 (Taho Plateau, northern Tenasserim).

Two males and one female, Khun Tan, 3,000–4,000 feet, February 18 and 23, 1932; one male, Konka Valley, January 25, 1933.

This form is a much brighter blue than *glaucicomans*, and the lighter blue on the forehead is more extensive. The female is similar to the same sex of that form but is more olive, less rufous.

The three males measure: Wing, 70.5–71 (70.7); culmen, 12 mm. The single female: Wing, 71; culmen, 12 mm.

The form ranges from the southern Shan States to central and southern Burma and east to northern and western Siam. De Schauensee [51] collected a series at Chiengmai and Chiengdao.

CYORNIS WHITEI WHITEI Harington

Cyornis whitei Harington, Ann. Mag. Nat. Hist., ser. 8, vol. 2, p. 245, 1908 (Watau, Bhamo district, Upper Burma).

Four males, Khun Tan, 4,000 feet, October 24–25, 1929, February 17 and 20, 1932; one female, Mekhan, February 8, 1932.

The males of this species can be distinguished from the males of the *rubeculoides* forms by the very small amount of black (or none at all) on the chin; from the *tickelliae* forms by the less amount of white on the belly. In the *whitei* forms the female is olive-brown, while in the *tickelliae* forms the female is bluish above. How to distinguish the females of the *whitei* forms from those of the *rubeculoides* forms, I frankly do not know.

The four males measure: Wing, 70.5–76 (72.7); culmen, 12–13 (12.6) mm.

The form ranges from Upper Assam, Upper Burma, northern Siam, Yunnan, French Laos, and Tonkin to northern Tenasserim. Chasen and Kloss [52] report it from Doi Sutep, 4,600 feet.

CYORNIS WHITEI CAERULEIFRONS Baker

Cyornis magnirostris caeruleifrons Baker, Bull. Brit. Orn. Club. vol. 39, p. 8, 1918 (Klang Bang Lai, Siam).

Five males and two females, Kao Lem, December 26–28, 1930; five males and six females, Kao Sabap, Chantabun, January 6, 7, 1930, October 31–November 26, 1933.

Dr. W. L. Abbott collected a male on Singapore Island, May 27, 1899 (no. 170508) that seems to belong here. It is a little duller blue above but has the same rufous underparts. If it does not belong here, I do not know where to place it.

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[51] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 215, 1934.

[52] Journ. Siam. Soc. Nat. Hist. Suppl., vol. 8, p. 239, 1932.

It is with a good deal of hesitation that I assign these birds to this race, as I have no specimens for comparison, but they do not fit any other described form with an olive-brown female. I have four males from northern Siam before me, however, that have been identified provisionally as *C. w. whitei.* The males of *caeruleifrons* are much darker blue above; below they are much darker, even the under tail coverts sometimes being buffy. There is a little white on the belly and generally on the under tail coverts. The two females from Kao Lem are not exactly alike and may not both belong to this species. Both are light brownish olive above, the heads with a grayish tinge; the tail and tail coverts in one are cinnamon-brown; in the other the tail is sepia and the tail coverts snuff brown. Below one is ochraceous-tawny, only a little white on the belly; the other is similar, except that the whole belly and lower breast are white, the sides washed with ochraceous-buff. The Kao Sabap females have the lower breast and belly white like the latter.

The six males measure: Wing, 70–73 (71); culmen, 12–13 (12.8) mm. The three females: Wing, 67–69 (68); culmen, 12.5–13 (12.8) mm.

The form ranges from eastern and southeastern Siam to southern Tenasserim and south through Peninsular Siam to the mountains of the Malay States. Robinson and Kloss[53] record it from Tapli, Pakchan, and say they have it from Kao Luang, Nakon Sritamarat, and have found it common in the mountains of Perak and Selangor at 2,000–3,000 feet.

CYORNIS MAGNIROSTRIS Blyth

Cyornis magnirostris Blyth, Journ. Asiat. Soc. Bengal, vol. 18, p. 814, 1849 (Darjeeling, India).

Dr. W. L. Abbott collected a male and female on Domel Island, Mergui Archipelago, February 23 and 25, 1900.

The male is much like *whitei* in coloration, but the white area of the belly is more extensive and the bill is much larger. The female is also similar to *whitei* but is lighter on the throat and the bill is larger. The male measures: Wing, 81; culmen, 14.5 mm. The female: Wing, 78; culmen, 14 mm.

The species ranges from Nepal to eastern Assam; Taho Plateau in Tenasserim to the extreme south of that Province; and south in Peninsular Siam as far as Junkseylon.

CYORNIS RUFIGASTRA RUFIGASTRA (Raffles)

Muscicapa rufigastra Raffles, Trans. Linn. Soc. London, vol. 13, p. 312, 1822 (Sumatra).

Cyornis banyumas calocephala Oberholser, Proc. Biol. Soc. Washington, vol. 33, p. 86, 1920 (Banka Island).

One male, Singapore Island, May 18, 1899, collected by Dr. W. L. Abbott.

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[53] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 231, 1924.

This specimen agrees fairly well with a male from the Kateman River, eastern Sumatra, and the type of *calocephala.* Four males from Borneo are somewhat lighter blue above and seem to represent another form, *C. r. beccariana* (Salvadori).

C. r. rufigastra ranges from Sumatra and Banka to the southern Malay States and the Rhio Archipelago. Apparently there are no Siamese records, but it may extend to Peninsular Siam.

CYORNIS UNICOLOR UNICOLOR Blyth

Cyornis unicolor Blyth, Journ. Asiat. Soc. Bengal, vol. 12, p. 941 (nomen nudum), p. 1007 (Darjeeling, India), 1843.

Two males, Khun Tan, September 2 and 5, 1930; one male, Doi Nangka, November 19, 1930; two males and one female, Doi Hua Mot, August 28, September 2, 1934; one male, Doi Kiew Koh Ma, December 25, 1932; two males and one female, Khun Tan Mountains, 3,000 feet, May 17, 18, 1933.

The only specimen available for comparison is a male from Margherita, Upper Assam. From it the Siamese specimens seem to be distinguished by being somewhat brigher blue.

The species *unicolor* can be told from the males of all others from Siam by its pale blue (porcelain or orient blue) upperparts and chest, the forehead venetian blue, the breast and belly light mineral gray with a brownish wash. The female is dull brown above, lighter below, becoming smoke gray on the belly; the nape has a bluish wash and the forehead is etain blue. The wings in four males measure 82.5–84 (83.1) mm. A male taken at Doi Hua Mot, August 28, is almost an albino. It is very pale blue, almost white, deeper on the forehead and throat, the back with faint dusky shaft streaks.

De Schauensee [54] took a male on Doi Sutep at 4,500 feet, which was recorded as *C. u. harterti;* later it was taken on the same mountain by Mr. Aagaard and recorded by Chasen and Kloss [55] as above; on his third expedition de Schauensee [56] took a good series on Chiengdao and at Chiengmai.

The form ranges from Darjeeling along the Himalayas to eastern Assam, Manipur, the southern Shan States, and northern Siam.

In the treatment of the genus *Cyornis* Blyth I have followed the revision of Robinson and Kinnear [57] with some minor changes. Since their revision appeared Chasen and Kloss [58] published a paper on the genus and reached different conclusions. Stresemann and de Schauensee [59] also have written a paper dealing with the species covered by this paper. This is a very difficult genus, and I have quoted few references, as it is hard, without having the specimens upon which an author bases his remarks or records, to allocate them.

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[54] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 571, 1928.

[55] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 239, 1932.

[56] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 214, 1934.

[57] Nov. Zool., vol. 34, pp. 231–261, 1928.

[58] Bull. Raffles Mus., no. 2, pp. 23–42, 1929.

[59] Proc. Acad. Nat. Sci. Philadelphia, vol. 88, pp. 337–351, 1936.

From the specimens that I have identified, I have compiled the following key to the males of the forms recorded from Siam.

KEY TO THE MALES OF SIAMESE CYORNIS

a^1. Upper parts, throat, and chest porcelain blue; belly grayish--**unicolor unicolor**
a^2. Upper parts and throat dark blue; belly white or rufous-buff.
  b^1. With no rufous-buff on lower parts.
    c^1. Larger, culmen 16 mm or more, with inner web of second, third, and fourth outer tail feathers white at base--**concreta concreta**
    c^2. Smaller, culmen about 12 mm, with no white in tail-----------**hainana**
  b^2. With rufous-buff on lower parts.
    c^1. Band on chin very narrow, 6 mm or less; sometimes absent.
      d^1. Larger, culmen 14-----------------------------------**magnirostris**
      d^2. Smaller, culmen less than 14 mm.
        e^1. Rufous-buff lighter and restricted to throat and upper chest; belly white---------------------**tickelliae sumatrensis**
        e^2. Rufous-buff deeper and extending over chest and breast.
          f^1. Belly white.
            g^1. Chin band very narrow; white on belly more extensive-------------------------------------**whitei whitei**
            g^2. Chin band broader, about 6 mm; white on belly more restricted------------------------**whitei caeruleifrons**
          f^2. Belly rufous-buff like breast and chest------**rufigastra rufigastra**
    c^2. Band on chin broader, 10 mm or more.
      d^1. Upper parts dull violaceous-blue; color of chest near ochraceous-buff and not extending so sharply into blue of throat------------------------------**rubeculoides dialilaema**
      d^2. Upper parts indulin blue; chest darker, ochraceous-orange, this color extending sharply into blue of throat------------------------------**rubeculoides glaucicomans**

MUSCICAPELLA HODGSONI HODGSONI (Moore)

Nemura hodgsoni MOORE, Proc. Zool. Soc. London, 1854, p. 76 (Nepal).

Two males, Doi Nangka, November 10, 1930, April 27, 1931.[60]

This is a very small bird, wing about 48 mm. Indulin blue above, somewhat brighter on the head; ochraceous-orange below; the forehead and lores dusky. Dr. Smith records the soft parts as follows: Iris dark brown; bill above black, below dark blue; legs light blue.

The form ranges from the mountains of Sikkim, Bhutan, and Assam to northern Siam. This record is an extension of the range of this form south from Burma.

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[60] Recorded by author, Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 159, 1933.

M. h. sodaica Robinson and Kloss is found in the mountains of western Sumatra, the Malay States, and Borneo. Possibly it occurs in Patani.

ANTHIPES MONILIGER LEUCOPS (Sharpe)

Digenea leucops Sharpe, Proc. Zool. Soc. London, 1888, p. 246 (Shillong, India).

Two females, Doi Nangka, November 12, 1930.

These two specimens have been previously recorded by me.[61] They were the first recorded for Siam. Later de Schauensee[62] collected two males and a female on Doi Sutep, 5,000–5,500 feet, February 3–March 1.

The range of this form is the mountains of Assam south of the Brahmaputra, mountains of upper Burma, northern Siam, French Laos, Tonkin, and North Annam.

ANTHIPES SOLITARIA MALAYANA (Sharpe)

Digenea malayana Sharpe, Proc. Zool. Soc. London, 1888, p. 247 (Larut Hills, Perak).

Dr. W. L. Abbott took a single male at Kao Nok Ram, 2,000 feet, Trang, January 11, 1899.

This specimen is much more saturate above than a male *submoniliger* from the Raheng district, and the pectoral band is more suffused with ochraceous-tawny.

The ranges of this and *submoniliger* must come very close together in Peninsular Siam, as Robinson and Kloss[63] say that specimens from Tung Song belong to *submoniliger*. Therefore the range of *malayana* extends from Trang, Peninsular Siam, south to the hills of the Malay States.

NILTAVA SUNDARA DENOTATA Bangs and Phillips

Niltava sundara denotata Bangs and Phillips, Bull. Mus. Comp. Zool., vol. 58, no. 6, p. 280, 1914 (Mengtsze, Yunnan).

De Schauensee[64] found this form in some numbers in winter on Doi Sutep, 2,800–5,500 feet; Deignan[65] later reports it fairly common from 4,500 to 5,500 feet, rarely as low as 2,500 feet, on the same mountain, but gives no date; Mr. Aagaard visited Sutep in February and March and took three specimens at 4,600 feet, recorded by Chasen and Kloss.[66] These are all the Siamese records known to me.

The form ranges from the high mountains of Yunnan and Szechwan, western China, south to northern Siam.

Whether the form is only a winter visitor to Siam or a permanent resident is not known at present.

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[61] Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 158, 1933.

[62] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 216, 1934.

[63] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 232, 1924.

[64] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 546, 1929.

[65] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, no. 3, p. 145, 1931;

[66] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 239, 1932.

NILTAVA GRANDIS NOBILIS Riley

Niltava grandis nobilis Riley, Proc. Biol. Soc. Washington, vol. 42, p. 161, 1929 (Doi Angka, Siam).

One male and one female, Doi Angka, 6,000 feet, December 4, 1928; seven males and two females, Doi Nangka, November 9, 10, 1930, April 23–27, 1931.

De Schauensee [67] took it on Doi Sutep, 5,500 feet; Deignan [68] reports it rather common on the same mountain between 4,600 feet and the summit; Mr. Aagaard also took it upon the summit of Sutep, and Chasen and Kloss [69] in reporting upon his collection doubt the distinctness of *nobilis*, but with a larger series now available from Siam the differences pointed out between *grandis* and *nobilis* still seem to hold, though it must be admitted I have had only one male of the former for comparison. I much doubt whether *decipiens* from Sumatra and the Malay States belongs to the same form group as *grandis*. The female of *decipiens* is much darker and has a differently colored pileum.

One of the males from Doi Nangka taken April 27 is somewhat smaller than the others and is a young bird of the previous year, as the flight feathers of the adult plumage have not yet been acquired, though otherwise it is in adult plumage.

The remaining seven males measure: Wing, 103–110 (106.5); tail, 91–97 (94); culmen, 13.5–15 (14.2) mm. The three females: Wing, 101–103.5 (102.5); tail, 86–88 (87.2); culmen, 14–15 (14.3) mm.

De Schauensee,[70] collected a series of this form from Doi Sutep, and upon comparison with *grandis* from Darjeeling claims that *nobilis* upon the strength of this material cannot be upheld. Strange to say, none of the series before me of seven adult males of *nobilis* approaches the single male of *grandis* examined. Even the immature male mentioned, though somewhat duller than the adult, is still brighter and a deeper blue than my specimen of *grandis*.

The males of this form are somewhat lighter and more brilliantly blue above than *N. grandis grandis*, and the breast and belly have more of a blue wash.

So far as known at present, *nobilis* is confined to the high mountains of northern Siam.

NILTAVA VIVIDA OATESI Salvadori

Niltava oatesi Salvadori, Ann. Mus. Civ. Storia Nat. Genova, ser. 2, vol. 5, pp. 514, 578, 1887 (Muleyit, northern Tenasserim).

Niltava smithi Riley, Proc. Biol. Soc. Washington, vol. 42, p. 164, 1929 (Doi Sutep, Siam); vol. 46, p. 65, 1933.

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[67] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 546, 1930.

[68] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 145, 1931.

[69] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 239, 1932.

[70] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 217, 1934.

Niltava williaminae DE SCHAUENSEE, Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 469, 1929 (Doi Sutep, Siam).

One female (type), Doi Sutep, December 15, 1928; two males and two females, Khun Tan, 4,000 feet, February 16 and 24, 1932.

Because this form was placed in the genus *Cyornis* by recent authors, where it does not belong, I was led into describing the first specimen forwarded by Dr. Smith as new and later caused de Schauensee to commit the same error.

Compared with *N. v. vivida*, of Formosa, the male of the present form is a duller blue above and on the throat and is somewhat larger.

Niltava davidi davidi and *N. d. lychnis*, of China, are also very closely related to *N. vivida*, but these two races have a brighter and lighter blue neck patch and apparently a differently colored female; otherwise they would go in one form group.

The range of *N. v. oatesi* is Assam south of the Bramaputra, Shan States of Burma, south to Tenasserim, Siam, and Tonkin. De Schauensee[71] secured a good series on his third expedition at Doi Sutep and Chiengdao and reached the same conclusion that I had reached after publishing my last note on this bird.

A closely related form, *N. v. sumatrana* Salvadori, is found in the mountains of the Malay States and Sumatra. Possibly it may extend into Patani.

NILTAVA MACGRIGORIAE (Burton)

Phoenicura macgrigoriae BURTON, Proc. Zool. Soc. London, 1835, p. 152 (Himalayas).

One immature male and one adult female, Doi Hua Mot, August 17, 22, 1934.

The immature male is in the spotted plumage. It resembles the adult female but lacks the specialized blue feathers on the side of the neck. The upperparts are spotted with russet and dusky; the lower parts are lightly flammulated with fulvous and sepia; the forehead and chin are lighter than in the female. It was without doubt raised in the vicinity and was taken August 22.

De Schauensee[72] took an immature male on Doi Sutep, 4,500 feet, July 18, and Deignan[73] secured a male on Doi Angka, 4,400 feet, April 6, 1931. These four birds comprise the sole records for Siam at the present time.

The species breeds in the Himalayas from Mussoorie to eastern Assam, Burma, Tenasserim, northern Siam, Tonkin, and northern Annam.

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[71] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 218, 1934.

[72] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 219, 1934.

[73] Rodgers and Deignan, Proc. Biol. Soc. Washington, vol. 47, p. 91, 1934.

OREICOLA DUMETORIA MUELLERI (Sharpe)

Muscicapa muelleri Blyth, Ibis, 1870, p. 166 (Sumatra and Borneo; no description).
Erythromyias muelleri Sharpe, Catalogue of the birds in the British Museum, vol. 4, p. 200, pl. 4, fig. 2, 1879 (Sumatra).

Dr. W. L. Abbott collected an immature male, Lay Song Hong, Trang, December 22, 1896.

This specimen is much lighter above than a male from Borneo, the nape is tinged with rusty, the white in the wing is confined to the greater coverts, the tertials are edged with rusty, and the white line extending back from over the eye is better defined. These differences are possibly due to age.

Robinson[74] records this form from Kao Nawng, 1,200–1,500 feet, Bandon; Robinson and Kloss[75] list two males taken at Tasan, Chumporn, March 17–24, which is the farthest north that the form has been recorded.

The race ranges from Borneo to Sumatra, the Malay States, and Peninsular Siam north to Tasan. In the Malay States it is said not to be an uncommon bird at moderate elevations. *O. d. dumetoria* (Wallace) inhabits Lombok and Java.

POLIOMYIAS MUGIMAKI (Temminck)

Muscicapa mugimaki Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 97, pl. 577, fig. 2, 1835 (Japan).

One immature male, Bangkok, April 11, 1934.

Robinson[76] records it from Langkawi and Terutau and says that it is common in the Malay Peninsula from October to April; Robinson and Kloss[77] list it from Kao Luang, 5,500 feet, Nakon Sritamarat; de Schauensee[78] took a male at Hua Mak, April 19.

The species breeds in northeastern Siberia and migrates through Japan and China to Indo-China, Siam, the Malay Peninsula, and the Greater Sunda Islands as far as Celebes.

MUSCICAPULA SAPPHIRA Blyth

Muscicapula sapphira Blyth (Tickell MS.), Journ. Asiat. Soc. Bengal, vol. 12, p. 939, 1843 (Darjiling, India).

One immature male, Khun Tan Mountains, 4,000 feet, November 21, 1928.

The adult male is described as having the upperparts deep purplish blue, brighter on the head and rump; lores black; chin, throat, and upper breast ochraceous-orange; remaining lowerparts pearl gray.

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[74] Journ. Federated Malay States Mus., vol. 5, p. 98, 1915.
[75] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 234, 1924.
[76] Journ. Federated Malay States Mus., vol. 7, p. 168, 1917.
[77] Journ. Federated Malay States Mus., vol. 11, p. 60, 1923; Journ. Nat. Hist. Soc. Siam, vol. 5, p. 234, 1924.
[78] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 213, 1934.

Wing, 60–63 mm. The immature male here recorded differs from the adult in having the pileum, upper neck, and upper mantle buffy brown. The female is described as having the whole upper plumage rufous-olive, more rufous on the forehead; upper tail coverts bright ferruginous; tail dark brown, tinged strongly with ferruginous; chin-throat, and breast pale, bright orange-chestnut; remainder of lowerparts, dull white.

The species ranges from Sikkim to eastern Bengal, Chin, and Kachin Hills to northern Siam.

The above specimen, which has been previously recorded,[79] is the first record for Siam, so far as known.

MUSCICAPULA MELANOLEUCA MELANOLEUCA Blyth

Muscicapula melanoleuca BLYTH, Journ. Asiat. Soc. Bengal, vol. 12, p. 940, 1843 (Nepal, Darjeeling).

One male and one female, Doi Nangka, November 3, 1930, April 23, 1931; one male, Pang Meton (Doi Nangka), May 5, 1931; one male, Doi Hua Mot, August 17, 1934.

This form has been recorded by de Schauensee [80] and by Deignan [81] from Doi Sutep as *M. melanoleuca westermanni*. Later, from specimens taken on the same mountain by Mr. Aagaard, Chasen and Kloss [82] say that the females show conclusively that Doi Sutep birds are not the Malayan *westermanni*. This is not surprising.

The range of this form is from Garhwal, Nepal, Sikkim to the extreme east of Assam and south to northern Siam, Yunnan, Laos, and Tonkin.

The females of this form have a brownish wash on the upperparts; not clear slaty-gray as in *westermanni* of the Malay Peninsula.

GERYGONE MODIGLIANII PECTORALIS Davison

Gerygone pectoralis DAVISON, Ibis, 1892, p. 99 (near mouth of Pahang River).

Gerygone griseus GYLDENSTOLPE, Orn. Monatsb., 1916, p. 27 (Koh Lak, southwestern Siam); Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 78, pl. 2, fig. 2, 1916.

Two males and three females, Nakon Sritamarat, September 18–21, 1926.

I have had only one female of *G. m. modiglianii* Salvadori from Banka for comparison. It is a slightly lighter yellow below; the lores have little or no white or gray; along the sides of the neck from the bill to the jugulum there is a dark line separating the yellow of the breast from the color of the upperparts. *G. m. pectoralis* is a little deeper yellow below; there is no dark line on the side of the neck; and the lores are whitish or grayish.

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[79] Riley, Journ. Siam Soc. Nat. Hist. Suppl., vol. 9, p. 158, 1933.

[80] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 545, 1930.

[81] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 144, 1931.

[82] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 239, 1932.

The two males of *G. m. pectoralis* measure: Wing, 49–50; tail, 32–33; culmen, 10–10.5 mm. The three females of *G. m. pectoralis*: Wing, 46.5–48.5 (47.3); tail, 30–34 (31.3); culmen, 9.5–10 (9.7) mm. The single female of *G. m. modiglianii*: Wing, 49; tail, 33; culmen, 10.5 mm.

Robinson and Kloss [83] mention a specimen from Pulo Panjang Amak, a small island near Junkseylon, and make some critical remarks; later they [84] received a series from Koh Lak and make some additional remarks on the status of the form.

Whether *G. m. pectoralis* is really distinct from *G. m. modiglianii* it is impossible to say with the series at my command, but I consider its wiser to recognize it until a larger series can be examined from Sumatra.

G. m. pectoralis would then range from the Malay States north through Peninsular Siam to southwestern Siam.

XANTHOPYGIA ZANTHOPYGIA (A. Hay)

Muscicapa zanthopygia A. HAY, Madras Journ. Lit. and Sci., vol. 13, pt. 2, p.162, 1844 (1845) (Malacca).

One female, Koh Lak, September 23, 1928; two males, Pran, April 1, 4, 1931; one male, Tha Lo, Bandon, September 24, 1931; one immature male and two females, Bangkok, April 10, 13, 1934.

This species breeds from Sakhalin Island, Korea, Manchuria, eastern China, and as far south as the Yangtze and west to Szechwan and migrates through southern China and Indo-China to winter in Peninsular Siam and the Malay States.

The only records known to me for Siam, outside the Peninsular and the southwestern sections, are the one of Kloss [85] for Lat Bua Kao, in the eastern district, and the one of Deignan [86] of a male taken at Ban Nako, Nan, April 2, 1936.

The United States National Museum contains a good series of breeding birds of this species from Korea and China. The Korean birds are paler yellow below. Both styles are represented in the three males taken by Dr. Smith; the two from Pran are like those of China, while the one taken at Tha Lo is like the breeding bird from Korea.

HYPOTHYMIS AZUREA PROPHATA Oberholser

Hypothymis azurea prophata OBERHOLSER, Proc. U. S. Nat. Mus., vol. 39, p. 597, 1911 (Great Karimon Island, eastern Sumatra).

Two males and one female, Bangnara, Patani, May 20, 1924, July 14, 16, 1926; two males, Kao Soi Dao, Trang, December 28,

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[83] Ibis, 1918, p. 591.

[84] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 235, 1924.

[85] Ibis, 1918, p. 191.

[86] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 170, 1936.

30, 1933; one male, Tha Lo, Bandon, September 17, 1931; two males, Pran, May 29, 1928, April 2, 1931; one male and one female, Bangkok, February 4, 1924, December 28, 1925; three males and one female, Nong Khor, near Sriracha, September 25, 26, 1925, February 7, 1927; one male, Ban Sadet, Sriracha, June 1, 1925; two males, Kao Seming, Krat, October 15 and 16, 1928; three males, Kao Sabap, November 1 and 14, 1933; two males, Koh Chang, March 31, 1924, January 6, 1926; two males, Koh Kut, May 20, 23, 1929; three males, Nong Yang October 20, November 16, 1931; one male, Ban Ta Yai, July 9, 1928.

Dr. W. L. Abbott collected four males and five females, Trang (Lay Song Hong, August 26 and September 9 and 17, 1896, January 2, 1897; Prahmon, February 22, 1896, Telibon Island, February 29, 1896; Trang, January 27, 1897, and January 1, 26, 1899); one female, Pulo Langkawi, December 8, 1899; one male, Dungun River, Trengganu, September 22, 1900.

After considerable study, I have reached the conclusion that the present form extends from the Malay States up Peninsular Siam and around the coast of southern Siam to southeastern Siam and probably over into southern Indo-China.

H. a. prophata is a darker, more purplish blue than the form from eastern and northern Siam, the breast and belly with more of a bluish wash, not so extensively white and the light tips to the tail feathers much reduced or sometimes absent. The birds from southeastern and southern Siam are a lighter blue than Peninsular specimens, with more white on the belly and the white tips to the tail feathers a little more pronounced. In other words, they are more or less intermediate but are nearer *prophata* than *styani*.

There seems to be little if any difference in size. Twelve males from Peninsular and southeastern Siam measure: Wing, 68–77 (72); tail, 68-77 (70.7); culmen, 11–13 (12–3) mm.

HYPOTHYMIS AZUREA STYANI (Hartlaub)

Siphia styani HARTLAUB, Abh. Nat. Ver. Bremen, vol. 16, Heft 2, p. 248, 1899 (Hainan).

Hypothymis azurea montana RILEY, Proc. Biol. Soc. Washington, vol. 42, p. 165, 1929 (Chiengmai, Siam).

Four males, Pak Chong, May 16, 1925, May 9, 1926, November 16, 19, 1929; five males, Lam Klong Lang, near Pak Chong, June 3–14, 1925; one male, Sikeu, near Korat, February 18, 1926; one male and one female, Lat Bua Kao, August 7, 1929; three males, Hin Lap, December 9, 11, 1931, September 30, 1932; one female, Knong Phra, April 11, 1929; one female, Lampang, November 15, 1928; one male, Chiengmai, November 25, 1928; one female, Ban Nam Kien, Nan, April 19, 1930; one male, Khun Tan, August 27, 1930; one male, Mae Hong Sorn, January 9, 1933; one immature male, Doi Hua Mot, August 30, 1934. Dr. Smith collected a nest and three eggs at Pak Chong, May 17, 1925.

The form is a lighter, less purplish blue than *prophata*, the belly more extensively white, and the light tips to the tail feathers larger and more pronounced.

When I named *montana*, specimens from southeastern Siam were unfortunately taken to represent *styani*. I am now satisfied they are closer to *prophata*. No specimens from Hainan have been available for comparison, but it is certain that birds from northern and eastern Siam are racially different from those from the south, and for the present the name *styani* can be employed for them. The few northern specimens examined are not quite the same as eastern Siamese specimens, the tip of the tail being more extensively white, but they are so close that it is best to merge them.

Ten males from eastern Siam measure: Wing, 68-77 (72.6); tail, 68–78 (73.4); culmen, 12–13 (12.5 mm). Three males from northern Siam: Wing, 72.5–75 (73.5); tail, 70–74 (72.3); culmen, 12–13.5 (12.5) mm.

The range of this form is apparently from Hainan and South China through Tonkin, North Annam, and French Laos to eastern, northern, and western Siam, Burma, and Assam.

De Schauensee [87] found it common in North Siam; Dr. Smith in eastern Siam; and Chasen and Kloss [88] report it from the Raheng District, western Siam. Gyldenstolpe [89] says it is common throughout Siam proper.

HYPOTHYMIS AZUREA FORRESTIA Oberholser

Hypothymis azurea forrestia OBERHOLSER, Proc. U. S. Nat. Mus., vol. 39, p. 601, 1911 (Loughborough Island, Merqui Archipelago).

Dr. W. L. Abbott collected the typical series of this form in the Mergui Archipelago, the type (an adult male) on Loughborough Island, January 23, and an adult male and two females on Sullivan Island, February 3 and 4, 1900.

This form does not differ markedly from *prophata;* the males are possibly a duller blue. The difference is one chiefly of size, and for such a small series this is not so startling. The male from Sullivan Island is considerably lighter in color and smaller than the type.

The two males measure: Wing, 76-79; tail, 75-77; culmen, 12.5–13.5 mm. The two females: Wing 73.5–75; tail, 73–75; culmen, 12.5–13 mm.

So far as known the form is confined to the Mergui Archipelago.

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[87] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 548, 1930.

[88] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 173, 1928.

[89] Ibis, 1920, p. 573.

CHELIDORHYNX HYPOXANTHUM (Blyth)

Rhipidura hypoxantha BLYTH, Journ. Asiat. Soc. Bengal, vol. 12, p. 935, 1843 (Darjiling, India).

One male, Doi Angka, 5,000–6,000 feet, December 7, 1928.

De Schauensee[90] took a single male on Chieng Dao, 4,500 feet, January 20, 1933, and Deignan[91] took a single female on Doi Angka, 8,400 feet, April 24, 1931.

The range of this species is the Himalayas from Simla to eastern Assam, Burma, Yunnan, northern Siam, and northwest Tonkin. It is a mountain bird.

RHIPIDURA JAVANICA LONGICAUDA Wallace

Rhipidura longicauda WALLACE, Proc. Zool. Soc. London, 1865, p. 476 (Sumatra).

Three males and two females, Bangkok, December 6, 13, 1924, July 2, 1925, May 26, 1926; one male, Sriracha, April 19, 1934; two females, Muang Kanburi, April 12, 16, 1928; one female, Bung Borapet, June 28, 1932; one female, Sam Roi Yot, November 8, 1932; one female, Patalung, July 10, 1929.

With the female taken at Bangkok, May 26, 1926, a nest and two eggs were collected, and a nest and one egg were taken at Patalung, July 10, 1929.

Dr. W. L. Abbott took the following in the Malay Peninsula: Three males and two females, Trang (Prahmon, February 23, March 7, and April 6, 1896; Tijching, May 26, 1896; Trang, January 5, 1897); two males, four females, and one unsexed, Trengganu (Dungun River, September 19, 22, 1900; Tandjong Dungun, September 20, 1900; Kemamun River and Kemamum, October 1, 1900).

For comparison I have available one male and two females from Java. These when compared with Malay and Siamese specimens are lighter above, especially around the head.

This form seems to be generally distributed virtually all over Siam and down the Malay Peninsula to the Malay States. It ranges from Burma to Siam, Cochinchina, and Cambodia and south through Peninsular Siam to the Malay States, Sumatra, Borneo, and some of the adjacent islands.

RHIPIDURA ALBICOLLIS ALBICOLLIS (Vieillot)

Platyrhynchus albicollis VIEILLOT, Nouv. Dict. d'Hist. Nat., ed. 2, vol. 27, p. 13, 1818 (Bengal).

Rhipidura albicollis celsa RILEY, Proc. Biol. Soc. Washington, vol. 42, p. 166, 1929 (Khun Tan Mountains, Siam).

One female, Khun Tan Mountains, 4,000 feet, November 23, 1928; one immature male, Pang Meton (Doi Nangka), May 2, 1931.

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[90] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, pp. 3, 220, 1934.

[91] Rodgers and Deignan, Proc. Biol. Soc. Washington, vol. 47, p. 91, 1934.

In 1929, on the strength of a single female, I separated the Siamese bird. This specimen was aberrant; the breast and belly had a rather wide white line down the center. Soon after publication de Schauensee,[92] and later Chasen and Kloss,[93] rightly questioned its status. De Schauensee, on his third expedition, took specimens resembling the type of *celsa*.[94]

In Siam this form has been taken only in the north, in the Khun Tan Mountains, Doi Sutep, Chiengdao, and Doi Nangka. Robinson and Kloss[95] say they have specimens from Kao Luang, Nakon Sritamarat; this is the only Peninsular Siam record apparently. It is a mountain form and occurs from the Himalayas to Burma, Yunnan, Siam, French Laos, Tonkin, and North Annam.

A darker form, *R. a. atrata* Salvadori, is recognized from Sumatra and the Malay States, and a lighter form, *R. a. cinerescens* Delacour, from southern Annam.

RHIPIDURA PERLATA S. Müller

Rhipidura perlata S. MÜLLER, Verhandelingen over de natuurlijke Geschiedenis der Nederlandsche overzeesche bezittingen . . . , pt. 7 or 8, p. 185, note, 1843 (Sumatra).

Dr. W. L. Abbott collected three males and one female in heavy forest in Trang (Trang, February 18, 27, 1897; Kao Nok Ram, 1,500 feet, December 28, 1898); one male, Endau River, eastern coast of Johore, July 16, 1901; and one male, Rumpin River, Pahang, June 5, 1902. He describes the soft parts as: Iris dark brown; bill black, whitish beneath; feet and claws dark brown.

The species ranges from Borneo and Sumatra to the Malay States and north in Peninsular Siam to Trang. I have seen no previous record north of the Malay States.

The United States National Museum possesses a small series from Borneo and the above series from the Malay Peninsula, but only one male from Sumatra. In plumage there is no appreciable difference between the series.

The wings in six males from the Malay Peninsula measure 82–90 (86.7); three from Borneo, 79–86 (83.3); one from Sumatra, 87 mm.

The species can be easily distinguished from the others of the genus inhabiting Siam in being dark slaty gray above and on the throat and chest, the breast white, the throat and chest with tear-shaped white spots.

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[92] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 547, 1930.

[93] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 240, 1932.

[94] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 220, 1934.

[95] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 238, 1924.

TERPSIPHONE AFFINIS AFFINIS (Blyth)

Tchitrea affinis Blyth, Journ. Asiat. Soc. Bengal, vol. 15, p. 292, 1846 (Malay Peninsula, Tenasserim, and Arrakan; type locality as restricted by Salomonsen,[96] Malacca).

Dr. W. L. Abbott collected the following: One male, the Dindings, Straits of Malacca, April 13, 1900; one male, Endau River, Pahang, June 27, 1901; one male, Rumpin River, Pahang, May 24, 1902, and one immature, not sexed, Packa, Trengganu, September 27, 1900.

The two males from Pahang are in the red plumage. They are much darker above and below than *indochinensis* in the same plumage, and the throats are washed with a shining bluish black; the under tail coverts also are darker. No specimens approach them from Patani or farther north. If these differences hold in a larger series, the northern form (*indochinensis*) should certainly be recognized.

The three males measure: Wing, 90–99 (93.3); outer tail feather, 75.5–87 (79.5); culmen, 20–21 (20.7) mm.

The form range is confined to the Malay States; possibly it may reach the southern part of Patani.

For the use of *Terpsiphone* Gloger, 1827, in preference to *Tchitrea* Lesson, 1831, see Stejneger.[97]

TERPSIPHONE AFFINIS INDOCHINENSIS (Salomonsen)

Tchitrea affinis indochinensis Salomonsen, Ibis, 1933, p. 734 (Angkor, Cambodia).

Four males and one female, Bangnara, Patani, May 11 and 17, 1924, July 7–9, 1926; one male and two females, Kao Luang, Nakon Sritamarat, July 16–19, 1928; one male, Huey Yang, Kao Luang, October 5, 1930; three males, Sichol, Bandon, May 15–27, 1930; one male, Pak Chong, December 9, 1929; one male, Koh Chang, January 16, 1926; five males and two females, Kao Sabap, Chantabun, January 7–9, 1930, November 1–25, 1933; one male, Kao Seming, Krat, October 12, 1928. Dr. Smith also took a male in the white plumage at Vientiane, Laos, February 21, 1929.

Dr. W. L. Abbott collected nine males and one female in Trang (Trang, February 3–13, 1897, January 25, and March 3, 1899, Kao Soi Dao, February 2–20–1899); one male, Domel Island, Mergui Archipelago, January 22, 1904.

Out of the considerable series of this form taken in Siam by Drs. Abbott and Smith, there are 10 males in the white plumage. This is a minority of the series, but the reason for this is probably that it takes two or more years to attain this plumage and specimens naturally would not be so numerous. I have handled specimens of *T. paradisi* that were changing from the red to the white plumage, and undoubtedly *T. affinis* and its forms go through the same process. Dr. Salomonsen,[98] in his remarks in the original description, says that only the red phase seems to be found in *indochinensis*. I believe that the red and the white plumages in this species are age characters, not phases in the sense accepted in ornithology. Undoubtedly the males breed in both plumages.

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[96] Ibis, 1933, p. 739.

[97] Proc. U. S. Nat. Mus., vol. 37, p. 652, 1910.

The form is lighter above and below than *T. a. affinis*.

Eight males from Laos (1), eastern (1), and southeastern Siam (6) measure: Wing, 90–97 (92.5); middle tail feathers, 228–330 (269.4); outer tail feather, 77.5–95 (82.9); culmen, 18.5–21 (20) mm. Ten males from Peninsular Siam (Trang north to Bandon): Wing, 91–98 (95.4); middle tail feathers, 241–343 (284); outer tail feather, 77–89 (80.7); culmen, 19–21.5 (20.3) mm. Four males from Patani: Wing, 92–99 (95); middle tail feathers, 255–330 (285.7); outer tail feather, 78–81 (79.2); culmen, 20–21.5 (20.9) mm.

Its range is from northern Siam, Laos, northwestern Tonkin, Annam, Cochinchina, and Cambodia to southern Siam and down Peninsular Siam to Patani.

Two of the males from Patani are in the white plumage and two in the red plumage. The two latter are as pale below and above as specimens in this plumage from southeastern Siam; in fact, they show no indication of grading toward *T. a. affinis*.

Dr. Smith took no specimens of *indochinensis* in northern Siam. Gyldenstolpe [99] reports it fairly rare at Khun Tan; Deignan [1] observed it several times on Doi Sutep in July and August. In southern and Peninsular Siam it is evidently much more abundant. It is supposed to be resident throughout the year.

TERPSIPHONE INCEI INCEI (Gould)

Muscipeta incei GOULD, The birds of Asia, pt. 2, pl. 19, 1852 (Shanghai).

One male and one female, Bangkok, September 22, 1923; one male, Nan, April 15, 1930; one male, Ban Nam Kien, Nan, April 19, 1930; one male and two females, Bo Ploi, Kanburi, September 9, 1928, and September 26, 1929; one female, Kanburi, September 24, 1929; one male, Huey Yang, Kao Luang, October 1, 1930; five males and two females, Tha Lo, Bandon, September 18–28, 1931; one male and one female, Kao Soi Dao, Trang, December 24, 1924, January 12, 1934.

Only two of the above males taken in Bandon are in the white plumage, but the central tail feathers are short.

Dr. W. L. Abbott took one adult male, and one immature male, Lay Song Hong, Trang, December 20, and October 4, 1896; one adult male, Trang, January 27, 1897; and two adult males in the

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[98] Ibis, 1933, p. 736.

[99] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 81, 1916.

[1] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 145, 1931.

Mergui Archipelago (High Island, December 31, 1900, and St. Matthew Island, December 24, 1903). Four males are in the white plumage.

This bird breeds in China and migrates late in summer to Siam and south in the Malay Peninsula to Sumatra.

The form has a shorter bill than the resident race *indochinensis.* The culmen in 10 males measures 16–18 (16.9) mm.

TERPSIPHONE SABABENSIS Riley

Terpsiphone sababensis Riley, Proc. Biol. Soc. Washington, vol. 47, p. 155, 1934 (Kao Sabap, southeastern Siam).

One male, Kao Sabap, November 21, 1933.

This species was described as follows: Wholly dull black with a bluish sheen in certain lights; belly white; under tail coverts white, the longer ones centered broadly with light grayish olive, and the basal ones with wood brown; under wing coverts black; thighs black. Wing, 86.5; tail, 95; culmen, 16 mm.

This species is similar to *T. periophthalmica,* of the northern Philippine Islands, but is smaller, the tail is less graduated, the center feathers only 6 mm longer than the next pair, and there is no fleshy eye ring. The type has two or three russet feathers in the scapulars on the right side, showing that the immature and probably the female have a brown plumage like most of the genus.

T. atrocaudata atrocaudata, of Japan, winters to some extent in Siam, but the male of this species has a dark maroon-purple mantle, and both the belly and breast are white; it is also a larger bird (wing, over 90; culmen, 17 or more mm), with a fleshy eye ring and a long graduated tail.

PHILENTOMA VELATA CAESIA (Lesson)

Monarcha caesia Lesson, Rev. Zool., 1839, p. 167 (Sumatra).

One male, Kao Luang, Nakon Sritamarat, July 17, 1928; one male and one female, Sichol, Bandon, May 23, 1930; two males and one female, Kao Soi Dao, Trang, December 26–29, 1933.

Dr. W. L. Abbott collected four males and one female, Trang (Lay Song Hong, September 1–12, 1896; Trang, February 3, 1897; Kao Soi Dao, 1,000 feet, February 10, 1899); one male, Rumpin River, Pahang, June 2, 1902. He gives the soft parts as: Iris red, bill and feet black.

Dr. Hartert[2] has fixed the type locality of *Drymophila velata* Temminck as Java; no specimens from that island have been available for comparison. The only male examined from Borneo is a somewhat lighter blue than any male in the Peninsular Siam series or in a single male from Sumatra.

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[2] Nov. Zool., vol. 9, p. 553, 1902.

This species should perhaps be placed in another genus, as it differs somewhat structurally from *Philentoma pyrhoptera,* but if so *Drymophila* Temminck (March 1825) cannot be used on account of *Drymophila* Such (January 1825).

P. v. caesia ranges from Sumatra north through the Malay States and Peninsular Siam to southern Tenasserim.

PHILENTOMA PYRHOPTERA PYRHOPTERA (Temminck)

Muscicapa pyrhoptera Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 101, pl. 596, fig. 1, 1836 (Borneo and South Sumatra; type locality restricted, Borneo).

Two females, Sichol, Bandon, August 29–September 1, 1929; one male, Tha Lo, Bandon, September 23, 1931; three females and one unsexed, Kao Sai Dao, Trang, December 30, 31, 1933, and January 8, 1934.

Dr. W. L. Abbott collected one male and three females, Lay Song Hong, Trang, September 1–December 29, 1896; one male, Kao Soi Dao, 1,000 feet, Trang, February 18, 1899; one male, Tandjong Badak, Tenasserim January 7, 1900. He gives the soft parts of the male as: Iris crimson; bill black; feet brownish leaden. The iris in one female is given as dark brown, otherwise as in the male. Another female has the bill black above, pale brownish fleshy below; iris dark red. This latter is the usual condition. All the females collected by Dr. Smith have light-colored bills. Only one female collected by Dr. Abbott has a black bill.

For comparison I have two males and one female from Borneo; one male is a deeper buff on the chest than any male in the Malay Peninsula series; the other male shows no differences from the latter. The female from Borneo is lighter above and a deeper buff below than any female in the Peninsular series.

The one male from Tenasserim and three from Peninsular Siam measure: Wing, 81–87 (83.5); culmen, 16.5–17 (16.8) mm. Two males from Borneo: Wing, 86–89.5; culmen, 16.5–17 mm. Two males from Sumatra: Wing, 79–82; culmen, 16–17 mm. Five females from Peninsular Siam: Wing, 75–82 (79.4); culmen, 15.5–16.5 (16) mm. One female from Borneo: Wing, 79.5; culmen, 14.5 mm.

The present form ranges from southern Tenasserim through Peninsular Siam to the Malay States, Sumatra, Borneo, and Cochinchina.

RHINOMYIAS OLIVACEA OLIVACEA (Hume)

Cyornis olivaceus Hume, Stray Feathers, vol. 5, p. 338, 1877 (South Tenasserim).

One female, Sichol, Bandon, September 2, 1929; one male and two females, Kao Soi Dao, Trang, December 30, 31, 1933.

Dr. Abbott collected two males and one female, Lay Song Hong, Trang, November 20, December 24, 1896; one male, Trang, February 28, 1897. He describes the soft parts as: Iris dark brown; bill black, brownish beneath; feet pale fleshy, pale brownish fleshy, pale bluish fleshy, or purplish fleshy.

The species ranges from southern Tenasserim south through Peninsular Siam to the Malay States, Sumatra, and West Java. Robinson and Kloss [3] say that specimens from the Malay Peninsula, Sumatra, and West Java are alike.

Stuart Baker erected the genus *Olcyornis* for this species, but Chasen [4] has removed it to *Rhinomyias* Sharpe where it probably belongs.

CULICICAPA CEYLONENSIS CALOCHRYSEA Oberholser

Culicicapa ceylonensis calochrysea OBERHOLSER, Smithsonian Misc. Coll., vol. 76, no. 6, p. 8, July 16, 1923 (Quaymos, Tenasserim).

Culicicapa ceylonensis orientalis BAKER, Bull. Brit. Orn. Club, vol. 44, p. 11, Nov. 5, 1923 (Szechwan, China).

One male, Doi Angka, 5,000 feet, December 7, 1928; one male, Doi Hua Mot, August 30, 1934; seven males and one female, Khun Tan, 3,000 feet, October 20, 28, 1928, September 2, 6, 1930, February 20–March 1932; one male, Kao Pae Pan Nam, February 18, 1934; one male, Lampang, November 15, 1928; five males and one female, Pak Chong, February 17, 1925, November 15, 18, 1925, November 16–26, 1929; one male and one female, Sikeu, near Korat, February 18 and March 1, 1926; one female, Kao Lem, December 26, 1930; three males, Hin Lap, December 8, 1931; one male, Hupbon, November 15, 1931.

This series seems to agree with specimens from northern Tenasserim and western China.

The race ranges apparently from western Szechwan and Yunnan south through Burma to Siam, Laos, Tonkin, and northern Annam.

CULICICAPA CEYLONENSIS ANTIOXANTHA Oberholser

Culicicapa ceylonensis antioxantha OBERHOLSER, Smithsonian Misc. Coll., vol. 76, no. 6, p. 9, July 16, 1923 (Kao Soi Dao, Trang).

Culicicapa ceylonensis meridionalis Stuart Baker, Bull. Brit. Orn. Club, vol. 44, p. 12, Nov. 5, 1923 (Keo, Tung Song, Siam).

One male, Kao Soi Dao, Trang, December 24, 1933.

Dr. W. L. Abbott collected two males, Kao Soi Dao, Trang, 1,000 feet, February 8, 1899; one male and one unsexed specimen, Lay Song Hong, Trang, August 31, 1896, and January 1, 1897; and one unsexed specimen, Telok Besar, Tenasserim, March 19, 1904.

This series, while small, appears to be darker above than more northern specimens. Two specimens from the Langbian Peaks, South Annam, are paler and evidently go with the northern form.

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[3] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 242, 1924.

[4] Bull. Raffles Mus., no. 11, p. 178, 1935.

C. c. antioxantha apparently is restricted to the Malay Peninsula from southern Tenasserim through Peninsular Siam to the Malay States. This form is close to *calochrysea* and may not be recognized as distinct by some authors, but for those who wish to unite the two forms I would call attention to the page precedence of the latter over the former name.

EUMYIAS THALASSINA THALASSINA (Swainson)

Muscicapa thalassina SWAINSON, *in* Jardine's Naturalist's Library, ed. 1, vol. 10, Flycatchers, p. 252, 1838 (India).

One female, Khun Tan Mountains, 4,000 feet, November 23, 1928; two females, Khun Tan, 3,000 feet, October 23, 1929, and February 16, 1932; three males, Doi Nangka, November 17–20, 1930; one male and one female, Bangkok, January 30, 31, 1925; one male, Hin Lap, December 10, 1931.

The range of this form is from the high mountains of western China to northern India, Burma, Tenasserim, Siam, as far in the southwest as Koh Lake and Nong Kae, eastward to French Laos, Tonkin, Annam, Cochinchina, and Cambodia.

Deignan [5] states that it occurs on Doi Sutep at 3,500–5,500 feet, and in small numbers on the plain in winter; it seems to be a common bird all over northern Siam and evidently breeds in the mountains. Away from the mountains it occurs only in the winter season, but it has been recorded from practically all parts of Siam proper.

Family MOTACILLIDAE: Wagtails, Pipits

MOTACILLA ALBA OCULARIS Swinhoe

Motacilla ocularis SWINHOE, Ibis, 1860, p. 55 (Amoy, Fohkien, China).

One male, Chiengmai, November 24, 1928; one male and one female, Lampang, November 15, 1928; one male, Nongkae, February 18, 1929.

This form has a light-gray back and a black ocular streak.

The form breeds in northeastern Siberia and migrates through eastern China to winter in southern China, Indo-China, Burma, eastern Bengal, Siam, Formosa, and the Philippine Islands.

De Schauensee [6] took a male at Chiengmai, January 5. Dr. Smith wrote *abundant* on the label of the Lampang male. Deignan [7] says that it is probably common in winter at Chiengmai from November 2 to February 16.

MOTACILLA ALBA BAICALENSIS Swinhoe

Motacilla baicalensis SWINHOE, Proc. Zool. Soc. London, 1871, p. 363 (eastern Asia).

One female, Lampang, November 15, 1928.

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[5] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 144, 1931.

[6] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 238, 1934.

[7] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 120, 1936.

This form has not been recorded from Siam before, unless the specimen that was recorded by Williamson [8] from Bangkok as *Motacilla leucopsis*, and that Robinson and Kloss [9] think is *dukhuensis*, belongs to this race, which I think is most likely.

M. a. baicalensis breeds from northern Manchuria to Lake Baical and south to northeastern China and migrates southwest to Yunnan, the Shan States, and northern Siam (one record).

This form resembles *ocularis*, but there is no black ocular streak.

Little is known or recorded on the migration route of this form. La Touche [10] says that he never found it along the coast, so that its migration must be inland and to the southwest. Its exact winter quarters are apparently not well known.

MOTACILLA LUGUBRIS ALBOIDES Hodgson

Motacilla alboides HODGSON, Asiat. Res., vol. 19, p. 191, 1836 (Nepal).

Dr. Smith did not secure this form in Siam but took a male not far over the border at Chong Yam, Burma, January 15, 1933.

De Schauensee [11] took a male at Chiengsen February 12, and although his record of this species is the only one I have seen for Siam, it probably occurs oftener than the lone record would indicate, as it breeds in the Himalayas, Tibet, the high mountains of western China, and Tonkin, and migrates south to India, Burma, Siam, and Indo-China.

The adult of this form has the back and the throat black.

MOTACILLA LUGUBRIS LEUCOPSIS Gould

Motacilla leucopsis GOULD, Proc. Zool. Soc. London, 1837, p. 78, 1838 (India).

One male, Muang Pai, December 28, 1932; one male, Noan Wat, February 14, 1929. Dr. Smith also took a male at Mehiek, Burma, January 13, 1933.

This form resembles *alboides* in the breeding plumage in being black above, but the black below is confined to the jugulum; the throat is white. Even in nonbreeding plumage the back is very dark gray, the nape black.

The form breeds in Manchuria, Mongolia, and northern China to Tibet and winters in southern China, Indo-China, Assam, Burma, eastern Bengal and Siam. In winter it has been taken practically all over Siam proper but especially in the northern and eastern part. I have no records for southwestern or Peninsular Siam, however.

Deignan [12] reports it common on the plain at Chiengmai from September to April.

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[8] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 200, 1917.

[9] Journ. Nat. Hist. Soc. Siam. vol. 5, p. 366, 1924.

[10] A handbook of the birds of eastern China, vol. 1, pt. 5, p. 400, 1930.

[11] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 238, 1934.

[12] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 153, 1931.

MOTACILLA CINEREA CASPICA (Gmelin)

Parus caspicus Gmelin, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, p. 104, pl. 20, fig. 2, 1774 (Enzeli, Caspian Sea).

One male, Chiengmai, November 25, 1928; one female, Nan, April 14, 1930; one female, Wang Kien, March 13, 1934; one male and one female, Sikeu, near Korat, February 7, 15, 1926; one female, Nong Mong, Muang Krabin, August 24, 1925; one male, Nong Khor, near Sriracha, September 27, 1925; one male, Koh Chang, January 16, 1926; one female, Pran, April 2, 1931.

Dr. W. L. Abbott collected three males and two females in Trang (Lay Song Hong, September 19 and October 4, 9, 1896; near base of Kao Nom Plu, March 8, 9, 1897); and three males, Mergui Archipelago, 1900 (Domel Island, February 25; Bentinck Island, March 11; Hastings Island, December 12).

All except two of the above series are either in winter or immature plumage.

The form breeds from the Ural Mountains east to Kamchatka and south to the Himalayas. It winters in India, Burma, Assam, Siam, Indo-China, the Malay Peninsula, Java, Borneo, the Philippines, Celebes, and as far south as New Guinea.

In Siam it is a common winter visitant all over the country and south in Peninsular Siam to the Malay States.

Deignan[13] reports it common at Chiengmai from August to April. I have not seen any dates for arrival and departure from the south.

BUDYTES FLAVUS SIMILLIMUS (Hartert)

Motacilla flava simillima Hartert, Die Vögel der paläarktischen Fauna, vol. 1, Heft 3, p. 289, 1905; Nov. Zool., vol. 26, p. 167, 1919 (Sula Island).

Four males, Bangkok, October 25, 28, 1926; April 11, 15, 1934; one unsexed, Hin Lap, September 29, 1932; two males and one female, Koh Tao, off Bandon, September 22, 26, 1928.

All this series, except the two spring males from Bangkok, are in immature plumage with white underparts.

The following were received from Dr. W. L. Abbott: Three immature males, Tanjong Kalong, Singapore, October 22, 1899; one female, 80 miles west of Penang, October 9, 1902.

Nearly all this series are in young plumage with white underparts. I am doubtful whether they all really belong to this form. There is no way of absolutely being able to tell the young of *B. f. simillimus* and *B. t. plexus* apart. Both color and measurements break down upon examination. As a rule the young of *plexus* form has a more narrow and interrupted superciliary, but a topotypical immature in the United States National Museum has this feature, almost if not quite, as well marked as the young of *B. f. simillimus.* The difficulty is that there are too few young specimens taken on their breeding grounds in collections to work out this plumage.

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[13] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 153, 1931.

Robinson and Kloss [14] state that this form is commoner than *B. t. plexus* throughout the Malay Peninsula. This is very likely the case, but there are few records.

The form breeds in Kamchatka and northeastern Siberia and migrates through eastern China to the Malay Peninsula, Java, the Philippines, Celebes, and the Moluccas.

BUDYTES FLAVUS TAIVANUS Swinhoe

Budytes taivanus SWINHOE, Proc. Zool. Soc. London, 1863, p. 334 (Formosa).

A male (in immature plumage) and a female collected by C. Boden Kloss at Tanjong Kalong, Singapore, November 7, 1899, were received from Dr. W. L. Abbott.

Gyldenstolpe [15] records two males collected at Koh Lak, December 2; Robinson and Kloss [16] state that they have seen three in the Williamson collection taken at Bangkok and that it is not a common bird in the Malay Peninsula.

The form breeds in the Lake Baical region to the Amur, Sakkalin, and the Kurils, wintering in Formosa, southeastern China, Indo-China, southern Siam, and the Malay Peninsula.

It is easily recognized from the other forms of the species by the yellow superciliary in all plumages.

BUDYTES THUNBERGI PLEXUS Thayer and Bangs

Budytes flavus plexus THAYER and BANGS, Proc. New England Zool. Club, vol. 5, p. 41, 1910 (Kolyma River, northeastern Siberia).

?*Budytes flavus macronyx* STRESEMANN, Avifauna Macedonica, p. 76, 1920 (Wladiwostok).

Seven males and two females, Bangkok, December 2, 22, 1924, October 23, 1925, October 28, 1926, April 13–28, 1934; one male, Nan, April 13, 1930.

These specimens have been compared with five specimens of *plexus* from the type locality with which they seem to agree fairly well, except for one male taken April 13, which has a grayer head and brighter back. All the Kolyma birds were taken in June and seem to be somewhat faded. One male taken June 2 approaches this bright-colored Bangkok male, however.

While I have not had any specimens of *macronyx* from the type locality for comparison, I am almost convinced that it is the same as *plexus* and is the form that migrates through eastern China to the

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[14] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 365, 1924.

[15] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 32, 1916.

[16] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 366, 1924.

Indo-Malayan region. Sushkin[17] upholds *macronyx*, however, but his diagnosis is not very convincing and he gives no measurements.

Five adults of *plexus* from the Kolyma measure: Wing, 77–83 (79.4); tail, 65–70 (67.7); culmen, 12.5–13 (12.8); hind claw, 10.5–11 (10.9) mm. Seven from Siam: Wing, 76–84 (80.4); tail, 67–72 (69.7); culmen, 13–13.5 (13.1); hind claw, 10–13 (11.2) mm.

As I have mentioned before,[18] it seems to me that *Budytes thunbergi* belongs to a different form group from *B. flavus* and that such an arrangement would certainly show their relationship and explain their distribution better.

B. t. plexus breeds in northeastern Siberia and migrates through eastern China to Indo-China, Siam, and Burma to winter. In Siam it has been recorded scatteringly practically all over the country and in Peninsular Siam as far south as Patani.[19] Deignan[20] records it as not uncommon at Chiengmai during the cold weather.

DENDRONANTHUS INDICUS (Gmelin)

Motacilla indica Gmelin, Systema naturae, vol. 1, pt. 2, pl 962, 1789 (India).

One male, Mekhan, February 7, 1932; one female, Pang Meton (Doi Nangka), May 2, 1931; one female, Khonka Valley, January 20, 1933; one male, Ban Nam Kien, Nan, April 20, 1930; two males and one female, Bangkok, December 30, 1925, April 5, 7, 1926; one female, Pak Chong, November 20, 1929; one male, Sakon Nakon, March 13, 1929; two females, Pran, April 1, 2, 1931; one male and one female, Nakon Sritamarat, September 18 and October 1, 1926.

Dr. W. L. Abbott collected the following: Two females in Trang (Telibon Island, February 27, 1896; Prahmon, March 28, 1896); and one unsexed, St. Luke Island, Mergui Archipelago, January 19, 1900. He gives the soft parts as: Iris dark brown; upper mandibles dull black, lower mandible fleshy white; feet flesh colored.

The species breeds in southeastern Siberia, Korea, northern China, the mountains of western China, Assam, and Burma, and winters in southern China, Indo-China, Siam, India, the Malay Peninsula, Java, Borneo, etc. It has been recorded practically from all over Siam, including the Malay Peninsula.

Deignan[21] recorded it once in August on Doi Sutep at 3,500 feet, which is a very early date; Williamson[22] reports it not common around Bangkok between the middle of September and April.

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[17] Proc. Bost. Soc. Nat. Hist., vol. 38, no. 1, p. 33, 1925.

[18] Proc. U. S. Nat. Mus., vol. 77, art. 15, p. 31, 1930.

[19] Ogilvie-Grant, Fasciculi Malayenses, pt. 3, p. 71, 1905.

[20] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 154, 1931.

[21] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 154, 1931.

[22] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 202, 1917.

ANTHUS HODGSONI Richmond

Anthus hodgsoni RICHMOND, *in* Blackwelder, Research in China, vol. 1, pt. 2, p. 493, 1907 (new name for *Pipastes maculatus* Jerdon, preoccupied; Nepal).

One male and one female, Chiengmai, November 24, 25, 1928; one male, Doi Nangka, November 20, 1930; one female, Khun Tan, October 26, 1929; one male and one female, Mae Hong Sorn, January 9, 1933; one male, Muang Pai, December 27, 1932; one male, Nongkai, February 18, 1929; three females, Sikeu, near Korat, February 22–March 1, 1926; one male and one female, Pak Chong, February 10, 1925, November 27, 1929; one female, Hin Lap, December 10, 1931; two males and two females, Tha Chang, March 16–18, 1927; one male, and one female, Sakon Nakon, March 13, 1929.

The species has been divided into several races. I agree with Bangs and Peters's [23] conclusions that it is not advisable to maintain them. Birds of this genus undergo great seasonable changes in plumage.

The species breeds on the Arctic coast of northeastern Siberia, the high mountains of western China, and the Himalayas. It migrates to India, Burma, Siam, Indo-China, the Malay Peninsula, and the Philippines to winter. It has been recorded from all over Siam, but in the Peninsula it apparently is only a straggler.

Robinson and Kloss [24] record two specimens taken near Trong, Trang, December; later [25] they say that Williamson has four in his collection from Nongkae, southwestern Siam, taken December and January, and mention that Kedah Peak is the southernmost place at which they have met it. Butler [26] however, recorded one from the Larut Hills, Perak. Deignan [27] states that at Chiengmai it is common from October to April.

ANTHUS CERVINUS (Pallas)

Motacilla cervina PALLAS, Zoographia Rosso-Asiatica, vol. 1, p. 511, 1811 (Camtschatka).

Anthus rufogularis BREHM, Lehrbuch der Naturgeschichte aller europäischen Vögel, vol. 2, p. 963, 1824 (Nubien and Deutschland).

Three males and one female, Bangkok, December 27, 1924, January 15, 1925; December 13, 1926, January 14, 1927; one male and one female, Noan Wat, February 14, 1929.

This species breeds in northern Europe and northern Asia to Kamchatka and migrates to Africa and to southern Asia as far as northern India, Siam, southern China, Indo-China, and the Philippines; accidental in Alaska and Lower California.

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[23] Bull. Mus. Comp. Zool., vol. 68, p. 368, 1928.

[24] Ibis, 1911, p. 74.

[25] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 369, 1924.

[26] Journ. Straits Branch Roy. Asiat. Soc., vol. 32, p. 21, 1899.

[27] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 154, 1931.

It has been recorded a number of times by several collectors from Bangkok. Williamson [28] records it from there between February and March; Kloss [29] from Koh Lak. Deignan [30] reports it locally common in December and January at Chiengmai. De Schauensee [31] took a pair at Petriu, October 23, 1932; Robinson and Kloss [32] record a male from Tapli, Pakchan, March 3, 1919. The latter is apparently the only record for Peninsular Siam.

It is probably a regular winter resident in Siam proper in small numbers.

ANTHUS RICHARDI RICHARDI Vieillot

Anthus richardi Vieillot, Nouv. Dict. d'Hist. Nat., ed. 2, vol. 26, p. 491, 1818 (Abbeville, France).

One male, Nan, April 16, 1930; three males and two females, Bangkok, February 27, 1925, October 25–November 1, 1926; one male, Ban Den Muang, February 25, 1929; one female, Ban Ton, February 27, 1929; one male, Sam Roi Yot, November 14, 1932.

This form breeds in Siberia and Kansu and migrates to southern China, Indo-China, Siam, Burma, and India to winter.

Williamson [33] records it from Bangkok, November to May; Kloss [34] from Lat Bua Kao, Tachin, and Koh Lak; de Schauensee [35] from Bangkok, January 11 and October 24, and Chiengmai, January 28; Robinson and Kloss [36] state that Williamson obtained a specimen at Naihut, Peninsular Siam, October 29, 1921, which is the southernmost record for the Peninsula.

This is the large form of pipit, with a very long hind claw. The wings in the above series (9) measure 86–95 (90.9); hind claw, 14–18 (15.9) mm.

ANTHUS RICHARDI MALAYENSIS Eyton

Anthus malayensis Eyton, Proc. Zool. Soc. London, 1839, p. 104 (Malacca).

One female, Yala, Patani, February 1, 1931; one male, Patalung, July 5, 1929; one male and one female, Huey Yang, Kao Luang, Nakon Sritamarat, October 10, 1930; two males and two females, Koh Lak, June 5–16, 1933; three females, Sam Roi Yot, November 7–14, 1932; one male, Ban Pong, September 17, 1929; three males, Bo Ploi, Kanburi, September 8, 9, 1928; 10 males and 21 females, Bangkok, September 19–October 11, 1924, October 22–30, 1925, June 23, August 3, 6, and October 28, 30, 1926, April 13, 1934; one male, Ban Takaw, October 22, 1932; two males, Bung Borapet, March 24,

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[28] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 205, 1917.

[29] Ibis, 1918, p. 220.

[30] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 154, 1931.

[31] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 239, 1934.

[32] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 369, 1924.

[33] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 203, 1917.

[34] Ibis, 1918, p. 220.

[35] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 239, 1934.

[36] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 368, 1924.

25, 1933; three males, Chomtong, November 29, 30, 1928; one female, Kao Lem Sing, Chantabun, June 11, 1926.

Dr. W. L. Abbott collected: Two males, two females, and one unsexed in Trang (Prahmon, March 5, 13, 1896; Lay Song Hong, December 10, 1896; near Chong, January 20, 1897); two females, Tanjong Badak, Tenasserim, January 7, 12, 1900; one female, Tanjong Kalong, Singapore, May 2, 1900; one male and one unsexed, Trengganu (Dungun River, September 19, and Tanjong Dungun, September 21, 1900). He gives the soft parts as: Iris dark brown; upper mandible horn brown, lower mandible pale fleshy, yellowish at gape; feet pale brownish fleshy.

Apparently there is no appreciable difference between specimens from northern Siam and the Malay Peninsula. No birds from Bengal have been available for comparison. A large series from the Philippines, where it is said to be resident, has a grayer cast above than the Siamese series, but below there is little difference. This is *A. r. lugubris* (Walden).

Eight males from the Malay Peninsula (6) and southwestern Siam (2) measure: Wing, 77.5–82.5 (80.5); tail, 52–58 (54.8); culmen, 14–15 (14.5); hind claw, 11–14.5 (12.9) mm. Nine males from northern and central Siam: Wing, 74–83 (80.3); tail, 50–58 (56); culmen, 13.5–14.5 (14); hind claw, 10–15 (12.2) mm. Ten males from the Philippines: Wing, 79–83 (81.4); tail, 55–63 (58.5); culmen, 14–15.5 (15); hind claw, 12.5–15 (13.7) mm.

A. r. malayensis ranges from northern Siam south to Tenasserim and south in Peninsular Siam to the Malay States, Sumatra, Java, and Borneo; to the east it probably extends into Cambodia.

Apparently it is a common resident all over Siam. Robinson[37] records it from Koh Samui and Koh Pennan, off Bandon, and from Langkawi;[38] Herbert found it breeding around Bangkok from early in May to as late as July 26 and describes the nest and eggs.[39]

The species breaks up into a number of races in Africa and Asia, extending in the latter as far south as Sumba.

The plumage is very variable, according to season. As a rule it is fresh and bright in fall and winter but bleaches out in spring and early summer.

There are several immature specimens in the series taken in June and August, but none very young. Those taken in June are of about adult size and differ from the adults only in plumage. Above they are similar to the adult; except the feathers are edged with a very light buff, almost white; below they are also similar to the breeding female, but the chest lacks the ochraceous wash and the spots are not so sharply defined. In the immatures taken in August the streaks on the chest are broader and more in the nature of spots than streaks. The immature is lighter below even than the breeding female. This may account for some of the light-colored winter specimens.

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[37] Journ. Federated Malay States Mus., vol. 5, p. 151, 1915.

[38] Journ. Federated Malay States Mus., vol. 7, p. 186, 1917.

[39] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 215, 1923.

Family ARTAMIDAE: Wood-swallows

ARTAMUS FUSCUS Vieillot

Artamus fuscus VIEILLOT, Nouv. Dict. d'Hist. Nat., ed. 2, vol. 17, p. 297, 1817 (Bengal).

Two females, Bangkok, September 14 and June 21, 1923; three males, Nongkae, May 5, 1929; one female, Sakon Nakon, March 16, 1929.

The female, taken at Bangkok, June 21, is immature. It is of about adult size. Similar to the adult but blackish above with wood-brown tips to the feathers of the back, the remiges tipped with drab, the gray tips to the tail feathers broader, the lower parts with dusky.

The species ranges from India east to western China, Burma, Indo-China, and Siam. In Siam it occurs pretty much all over the country, except the Peninsular portion. Koh Lak in the southwest is as far in this direction as it has been recorded.

Gyldenstolpe [40] records it from Chiengsen and Koh Lak. Herbert [41] found it breeding in colonies at Bansakai and Paklat, central Siam, from the middle of April to the middle of June and describes the nest and eggs. Deignan [42] states that it is common on the plain at Chiengmai throughout the year. There are a few other records for the central and western part of the country.

Family LANIIDAE: Shrikes

LANIUS COLLURIOIDES Lesson

Lanius collurioides LESSON, Voyage aux Indes-Orientales . . . Bélanger, p. 250, 1831 (Pegu).

Lanius hypoleucus siamensis GYLDENSTOLPE, Orn. Monatsb., 1916, p. 28 (Koh Lak, Siam).

Lanius collurioides griseicapillus DELACOUR, Bull. Brit. Orn. Club, vol. 47, p. 13, 1926 (Xieng-Khouang, Laos).

One male, Bo Ploi, Kanburi, September 9, 1928; one male, Lomsak, February 16, 1934; one male, Chiengmai, November 26, 1928; one female, Pak Chong, February 8, 1925. Dr. Smith gives the soft parts as: Iris dark brown; bill black; legs dusky blue.

The male from Bo Ploi is almost pure white below, the Chiengmai male light ochraceous-buff, and the Lomsak male intermediate. The female has the forehead and superciliary white, the pileum and hindneck light neutral gray, the auriculars fuscous, and the mantle lighter than in the male; the lower parts white.

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[40] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 43, 1916.

[41] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 109, 1923.

[42] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 147, 1931.

A specimen similar above, from Lat Bua Kao, collected by C. Boden Kloss, October 13, is in the United States National Museum; below it is ochraceous-buff. It is sexed as a subadult female.

Gyldenstolpe[43] records this shrike from Koh Lak and Khun Tan; Kloss[44] took it at Lat Bua Kao; de Schauensee[45] records it as common in the lowlands at Chiengmai, Chiengrai, and Chiengsen, and on his third expedition[46] he collected it at the additional localities of Bua Yai and Tung Sio. Deignan[47] states that it is common on the plain at Chiengmai from July to March.

The form ranges from the hills south of the Brahmaputra, Assam, south to Tenasserim, southwestern, central, northern, and eastern Siam, east to Laos, Tonkin, northern Annam, and Cambodia.

LANIUS NIGRICEPS LONGICAUDATUS Ogilvie-Grant

Lanius longicaudatus Gould, Proc. Zool. Soc. London, 1859, p. 151 (Siam; nomen nudum).

Lanius nigriceps var. *longicaudatus* Ogilvie-Grant, Nov. Zool., vol. 9, p. 479, 1902 (Siam).

One female, Nakon Patom, April 10, 1926; two adult males, one adult female, and one immature female, Bangkok, March 14 and June 27, 1924, October 23, 1925, November 4, 1926; two males, Rangsit, May 5, 1929; one male, Nongkae, May 5, 1929; two males, one female, and two young, Bung Borapet, June 21, 28, 1932.

The two young taken at Bung Borapet, June 21 and 28, are considerably smaller than the adults. In the younger of the two specimens the pileum is buffy white, the crown and nape with dusky cross bars; a black masque embracing the subocular and auricular region; hindneck gray, barred with fuscous; remainder of upper parts ochraceous-buff barred with fuscous but with some russet feathers of the next plumage coming in; a new blackish tail is replacing a tawny one; the inner remiges are bordered with tawny; the lower parts are white, band across chest and sides warm buff with sparse very fine cross bars; under tail coverts warm buff.

The immature taken at the same place, June 21, is similar, but the cross bars on the head come farther forward, and a few black feathers are appearing on the nape.

An immature female taken at Bangkok, June 27, is similar to the last, but it has a longer and browner tail, the bars on the head are heavier and come farther forward. It is a larger and older bird.

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[43] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 40, pl. 2, fig. 1, 1916.

[44] Ibis, 1918, p. 214.

[45] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 549, 1930.

[46] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 221, 1934.

[47] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 145, 1931.

This race differs from *L. n. nigriceps* in having the black farther down on the hindneck without any intervening gray band between it and the hazel of the back, the latter deeper, the tail longer.

It ranges from central Siam to southwestern Siam and Tenasserim, but just how far it extends east and southwest is not known.

Gairdner [48] records it from the Petchaburi district; de Schauensee [49] from Sriracha. Herbert [50] found it breeding around Bangkok and took nests and eggs in May and June.

LANIUS CRISTATUS CRISTATUS Linnaeus

Lanius cristatus LINNAEUS, Systema naturae, ed. 10, p. 93, 1758 (Bengal).

Two immature males and one immature female, Bangkok, October 12, 1923, December 21, 1925, October 25, 1926; one immature female, Pak Chong, November 22, 1929.

Dr. W. L. Abbott collected a single immature female, Kantany, Trang, January 16, 1897.

This form breeds in eastern Siberia and winters in southern China, Indo-China, Siam, northern India, and the Malay Peninsula.

Deignan [51] reports it very common around Chiengmai from July to March; Williamson [52] records it from Bangkok September to April; Robinson [53] states that in the Malay Peninsula it extends south as far as Malacca and the Langkawi Islands.

LANIUS CRISTATUS SUPERCILIOSUS Latham

Lanius superciliosus LATHAM, Index ornithologicus, Suppl., p. xx, 1801 (Batavia, Java).

One subadult male, Ban Pong, September 17, 1929.

Dr. W. L. Abbott collected one immature male, Lay Song Hong, Trang, October 17, 1896; one adult male, one adult female, and two immature females, Trengganu in 1900 (Tanjong Dungun, September 22; Packa River, September 25; Tanjong Laboha, September 30; Kamamun River, October 1).

This is a deeper red-backed form than *L. c. cristatus*, with a broader white forehead and superciliary.

It breeds in Sakhalin, Japan, Manchuria, and Mongolia, and winters in southern China, Indo-China, the Malay Peninsula, Java, and the Sunda Islands as far as Sumba.

The migration route of this form to the Malay Peninsula must be more to the eastward, as there are no records for it from eastern

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[48] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 149, 1915.

[49] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 221, 1934.

[50] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 107, 1923.

[51] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 146, 1931.

[52] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 90, 1914.

[53] The birds of the Malay Peninsula, vol. 1, p. 256, 1927.

Siam and few for Peninsular Siam; in fact, Williamson's [54] record from Bangnara, Patani, stood as the sole one for Siam for a long while.

LANIUS TIGRINUS Drapiez

Lanius tigrinus DRAPIEZ, Dict. Class. Hist. Nat., vol. 13, p. 523, 1828 (Java).

One adult male, Prae, April 27, 1930; one immature male, Bangkok, September 24, 1930; one immature male, Tha Lo, Bandon, September 24, 1931; one immature female, Bukit, Patani, January 26, 1931. Dr. Smith gives the color of the soft parts in the adult male as: Iris dark brown; bill and feet bluish slate.

Dr. W. L. Abbott collected one immature male and two immature females, Lay Song Hong, Trang, September 6–24, 1896.

This species breeds in Japan, eastern Siberia, and northern China to the Yangtze Valley and migrates to south China, Indo-China, Siam, Tenasserim, the Malay Peninsula, Sumatra, Java, and Borneo to winter.

Gyldenstolpe [55] took a male at Khun Tan, May 4; Robinson [56] records two specimens from Pulo Terutau, December 21, 26.

Family PRIONOPIDAE: Wood-shrikes

TEPHRODORNIS GULARIS PELVICA (Hodgson)

Tentheca pelvica HODGSON, Indian Rev., vol. 1, p. 447, 1837 (Nepal).
Tephrodornis pelvicus vernayi KINNEAR, Bull. Brit. Orn. Club, vol. 44, p. 102, 1924 (Umpang, Siam).

One male, Doi Sutep, February 3, 1932; one female, Doi Nangka, November 17, 1930; one female, Pang Meton (Doi Nangka), May 5, 1931; one male and three females, Doi Hua Mot, August 23–September 2, 1934; four males and four females, Khun Tan, 3,000–4,000 feet, August 26–September 5, 1930, February 14–29, 1932; one male and one female, Khun Tan Mountains, 2,000–3,000 feet, November 23, 1928, May 11, 1933; one female, Ta Fang, January 18, 1933; one female, Khonka Valley, January 19, 1933; one male, Ban Han, Udon, March 17, 1929; two males and two females, Pak Chong, December 16, 1926, March 13, 1927; one male, Lam Klong Lang, Pak Chong, June 4, 1925; one male, Sakeo, near Krabin, May 2, 1928.

This series is a lighter gray on the head, with the mantle washed with brownish, and considerably larger than the form found in Peninsular Siam. I have had only one old female specimen of *pelvica* from Sikkim for comparison. It is browner above than any female from Siam before me but in measurements agrees quite closely. It may be that the northern Siamese bird is not *pelvica* at all, in which case the name *vernayi* is available. Two males and a female from southern Annam apparently belong to the northern form.

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[54] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 20, 1918.
[55] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 39, 1916.
[56] Journ. Federated Malay States Mus., vol. 7, p. 184, 1917.

Ten males from northern and eastern Siam measure: Wing, 111.5–126 (116.5); tail, 73–84 (80); culmen, 18.5–21.5 (20.2) mm. Eleven females from northern and eastern Siam: Wing, 112.5–118 (114.9); tail, 76–87 (82.2); culmen, 19–20.5 (19.8) mm.

The present form ranges from Nepal south through Assam and Burma to northern and eastern Siam and southern Indo-China.

TEPHRODORNIS GULARIS ANNECTENS Robinson and Kloss

Tephrodornis pelvica subsp. *annectens* ROBINSON and KLOSS, Journ. Federated Malay States Mus., vol. 8, p. 222, 1918 (Lamra, Trang).

Tephrodornis gularis fretensis ROBINSON and KLOSS, Journ. Straits Branch Roy. Asiat. Soc., 1920, p. 109 (Gunong Angsi, Negri Sembilan).

One male, Bukit, Patani, January 26, 1931; one adult male, and one immature male, Patalung, July 7, 1929; one female, Kao Soi Dao, Trang, January 15, 1934; one female, Waterfall, Trang, August 24, 1933; two males, Ban Ta Yai, Nakon Sritamarat, July 8, 1928; one male, Ban Huey Ta, Kao Luang, Nakon Sritamarat, July 18, 1928; one female, Kao Luang, 2,000 feet, Nakon Sritamarat, July 21, 1928; two males and one female, Koh Lak, June 15, 1933. Dr. Smith gives the soft parts as: Bill black; feet plumbeous (adult male); bill dark horn (immature male).

Dr. W. L. Abbott collected six males and three females in Trang (Prahmon, February 23–March 15, 1896; Tyching, May 25, 1896; near Kok Sai, December 30, 1898; Trang, January 25–March 3, 1899). He gives the soft parts as: (male) iris pale yellowish brown or pale green; bill black; feet dark leaden. The female has the bill horny brown, tip black.

This series from Peninsular Siam is darker above and smaller than birds from Koh Lak northward. As a matter of fact, specimens from Koh Lak are more or less intermediate; a little larger than specimens from farther south and smaller than birds from the north, but on the whole nearer the southern form.

Thirteen males from Patani north to Koh Lak measure: Wing, 100.5–111.5 (106.2); tail, 66–76 (70.5); culmen, 18.5–21 (19.9) mm. Eight females from Trang north to Koh Lak: Wing, 102.5–110 (105.8); tail, 67.5–78 (72.3); culmen, 18–21 (19.9) mm.

The form ranges from the Malay States northward to southern Tenasserim and southwestern Siam. *T. g. gularis* (Raffles), of Sumatra and Java, is smaller and darker.

TEPHRODORNIS PONDICERIANA THAI Kloss and Chasen

Tephrodornis pondicerianus thai KLOSS and CHASEN, Bull. Brit. Orn. Club, vol. 46, p. 58, 1926 (Tachang Thai, Raheng, western Siam).

Two males, Mekhan, February 6, 1932; three males, Meserieng, January 23, 1933; two males, Doi Tin Pata, December 26, 1932.

This small wood-shrike can easily be distinguished from the other species of the genus occurring in Siam by the smaller size (wing about 85 mm), white outer tail feathers, and white superciliary. It does not seem to be nearly so common as the larger species occurring in northern Siam.

I have seen no good comparative material from India, but the specimens examined appear to be more brownish above and below than any in the Siamese series.

Gyldenstolpe has recorded it from Muang Pré [57] and Khun Tan [58]; Lowe [59] from Kempempet.

The form ranges from western and northern Siam to Cambodia, southern Laos, southern Annam, and Cochinchina.

HEMIPUS PICATUS (Sykes)

Muscicapa picata SYKES, Proc. Zool. Soc. London 1832, p. 85 (Dukhun).
Muscicapa capitalis McCLELLAND, Proc. Zool. Soc. London, 1839, p. 157, 1840 (Assam).

One male, Kao Chong, Trang, September 5, 1933; two males, Tha Lo, Bandon, September 13, 22, 1931; one male, Koh Lak, June 14, 1933; one female, Pran, April 1, 1931; one female, Muang Kanburi, April 15, 1928; five males, Aranya, July 14–19, 1930; one male and one female, Khun Tan, 3,000 feet, September 2, 1930, February 19, 1932; one male and four females, Hin Lap, December 6, 1931; October 2, 3, 1932; two males, Lat Bua Kao, July 30 and August 7, 1929; four males and five females, Pak Chong, February 19, 22, 1924, May 15, 16, 19, 1925, May 9, 1926; November 19, 24, 1929; one male and one female, Lam Klong Lang, June 11, 1925; one male and one female, Tha Chang, March 16, 1927; three males, Sikeu, near Korat, February 18–March 4, 1926; two males, Sriracha, May 24, 1925, April 20, 1934; one male and two females, Nong Yang, November 7, 16, 1931; one male and one female, Krat, October 19, 1928. The following five specimens are brown-backed birds (*capitalis*): One male, Doi Nangka, November 20, 1930; one female, Pang Meton (Doi Nangka), May 3, 1931; two males and one female, Doi Hua Mot, August 24, 28, 1934.

Dr. W. L. Abbott collected one male and four females in Trang (Prahmon, April 6, 1896; Lay Song Hong, November 30, 1896; Trang, January 5 and March 3, 1899). He gives the soft parts as: Iris dark brown; bill and feet black.

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[57] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no 8, p. 32, 1913.

[58] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 42, 1926.

[59] Ibis, 1933, p. 273.

Peninsular Siamese specimens apparently do not differ in size or color from those from the northern part of Siam.

In northern Siam and extending into Burma, Assam, and Yunnan, a brown-backed bird occurs along with black-backed specimens. De Schauensee[60] states that he found black-backed and brown-backed birds in the same flocks and is of the opinion that the latter is only a color phase of the former. I am inclined to the same opinion, except the brown-backed birds seem to be found only in the northern part of Siam northward.

Ten males of *H. picatus* from northern and eastern Siam measure: Wing, 62–64 (63.5); tail, 56–61 (57.5); culmen, 11.5–13 (12.2) mm. Three males from Peninsular Siam: Wing, 61–63 (61.8); tail, 53.5–58 (55); culmen, 12, 13 (12.3).

This species has a wide range, embracing practically all India, Burma, Assam, Yunnan, Siam, Indo-China, the Malay Peninsula, Sumatra, and Borneo. In Peninsular Siam it apparently is not so common as it is farther north in Siam proper.

HEMIPUS HIRUNDINACEUS (Temminck)

Muscicapa hirundinacea TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, livr. 20, pl. 119, figs. 1, 2, 1822 (Java).

Muscicapa obscura HORSFIELD, Trans. Linn. Soc. London, vol. 13, p. 146, 1821 (Java); not of Gmelin, 1789.

One male, Yala, Patani, January 29, 1931.

Dr. W. L. Abbott collected a female at Packa, Trengganu, September 27, 1900.

The series of males of this species at my disposal is too small to enable me to reach any definite conclusions as to any geographic variations it might be subject to. The Patani male has almost no white edging to the outer web of the outer tail feather.

This species has a wide range, occurring from Borneo, Java, Billiton, Sumatra, and the Malay States north through Peninsular Siam to Tenasserim. In Peninsular Siam it evidently is a rare bird, as I have seen only one previous record, that of Williamson[61] for Bangnara, Patani; his record from Paknam, Chumporn, belongs to *H. picatus*, according to Robinson and Kloss.[62]

MUSCITREA GRISOLA GRISOLA (Blyth)

Tephrodornis grisola BLYTH, Journ. Asiat. Soc. Bengal, vol. 12, p. 180, 1843 (near Calcutta).

One male, Bangnara, Patani, July 14, 1926; one male, Singora, July 2, 1929; two males and two females, Nakon Sritamarat, September 18–26, 1926; four males and three females, Koh Tao, December 29,

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[60] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 222, 1934.

[61] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 20, 1918.

[62] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 329, 1924.

1926 and September 18–24, 1928; one female, Koh Samui, August 7, 1931; two males and two unsexed, Koh Lak, June 13 and 23, 1933.

Dr. W. L. Abbott collected two males and two females in the Mergui Archipelago (Domel Island, February 24, 1900; Helfer Island, March 6, 1900; High Island, December 31, 1900; Sir William James Island, December 30, 1903); one male, Dungun River, Trengganu, September 24, 1900; and one female, Pulo Babi, east coast of Johore, July 28, 1901.

The four specimens from the Mergui Archipelago seem to be lighter above than Dr. Smith's series from Peninsular Siam, but the latter were collected mostly late in summer or early in fall; when specimens are compared, taken at about the same season, the differences largely disappear.

Ten males from the Malay Peninsula measure: Wing, 78–85 (81.8); culmen, 13.5–15 (14.2) mm. Nine females from the Malay Peninsula and southeastern Siam: Wing, 77–87 (81); culmen, 13.5–15 (14.2) mm. The two males from Mergui Archipelago: Wing, 86–90; culmen, 15–15 mm. The two females: Wing, 82–88; culmen, 14–14.5 mm.

Robinson and Kloss [63] say that in their experience it is never found very far from the mangrove belt; consequently it is found around the coast and on islands off the coast from the Malay States in the south, north through Peninsular Siam to Tenasserim, Pegu, and Arracan; eastward it extends to southeastern Siam, Cochinchina, and South Annam.

Apparently it has never been taken as far west as the type locality, but it probably came from farther east. In Java a closely related form, *M. g. butaloides*, occurs, and there are several other forms found on other islands to the east and west of Java.

Robinson [64] records it from Koh Samui, off Bandon; and later [65] from Pulo Langkawi, Butang, Nipis, and Tengah; also [66] Koh Klum and Koh Rang, southeastern Siam. De Schauensee [67] records it from Tamuang March 8.

PLATYLOPHUS GALERICULATUS ARDESIACUS (Cabanis)

Lophocitta ardesiaca Cabanis, *in* Bonaparte, Conspectus avium, vol. 1, p. 374, 1850 (Java?); Museum Heineanum, vol. 1, p. 219, 1850 (Sumatra, error; Malacca [68]).

Two males and three females, Bangnara, Patani, May 15, 28, 1924, July 3, 7, 1926; five males and one female, Kao Soi Dao, Trang, January 4–22, 1934; two males and two females, Sichol, Bandon,

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[63] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 234, 1924.

[64] Journ. Federated Malay States Mus., vol. 5, p. 148, 1915.

[65] Journ. Federated Malay States Mus., vol. 7, p. 169, 1917.

[66] Ibis, 1915, p. 743.

[67] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 221, 1934.

[68] Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 5, p. 324, 1924.

September 1, 1929, May 18 and October 3, 1930; one male and three females, Tha Lo, Bandon, September 15–21, 1931. Dr. Smith describes the iris as reddish brown, bill black, feet black or dusky blue.

Dr. W. L. Abbott collected four males and three females in Trang (Prahmon, April 3, 1896; Lay Song Hong, August 23–September 12, 1896; Kao Soi Dao, 1,000 feet, February 18, 1899); one female, Tanjong Dungun, Trengganu, September 23, 1900; one male and one female, Endau River, east coast of Johore, June 28, 30, 1901; one male, Rumpin River, Pahang, June 26, 1902. He gives the soft parts as: Iris pale brown, hair brown, reddish brown, or dark red; bill and feet black. The specimen collected at Prahmon, April 3, is immature.

Four of Dr. Smith's specimens are immature but of about adult size or only slightly smaller. They were collected at Sichol, September 1; Tha Lo, September 15, 21, and Kao Soi Dao, January 17.

The youngest specimen is a male taken at Tha Lo, September 21, but it is of nearly adult size and resembles the adult above, but the longer crest feathers are tipped with rusty, the frontal feathers with white shafts, the remiges, primary coverts, and greater wing coverts are tipped with orange-cinnamon; the lowerparts are barred with white. As the immature grows older, the breast becomes grayer and the white bars become shaft streaks, either white or buffy. The orange-cinnamon to the primary coverts and remiges persists for a while after the bird has assumed apparent adult plumage. One of Dr. Abbott's specimens, taken at Kao Soi Dao, February 18, is in this plumage.

The form ranges from southern Tenasserim throughout Peninsular Siam to the Malay States. It seems to be a common bird throughout Peninsular Siam, and Robinson and Kloss[69] record it from Tasan; Gyldenstolpe[70] from Hat Sanuk. The last is in southwestern Siam and about the northern limit of its range.

P. g. galericulatus (Cuvier), with a black back, is confined to Java.

Family STURNIDAE: Starlings

GRACULA RELIGIOSA RELIGIOSA Linnaeus

Gracula religiosa LINNAEUS, Systema naturae, ed. 10, p. 108, 1758 (Asia-Java[71]).

One male and one female, Bangnara, Patani, May 14, 1924; one male and two females, Yala, Patani, January 29, 1931; one female, Patalung, July 8, 1929: one female, Ban Peng Sao, Nakon Sritamarat, July 27, 1928; one immature male and two females, Sichol, Bandon,

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[69] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 328, 1924.

[70] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 42, 1916.

[71] For the use of the name *Gracula religiosa* instead of *Gracula javana*, see Oberholser, U. S. Nat. Mus. Bull. 159, p. 91, 1932.

May 21, 28, 1930; one female, Bandon, January 5, 1927; one female, Koh Pangan, July 27, 1931. Dr. Smith gives the soft parts as: Iris dark brown; bill red or reddish yellow; legs deep yellow or yellow.

Dr. W. L. Abbott collected one male and four females, Prahmon, Trang, March 5–April 2, 1896; one female, Pulo Langkawi, December 3, 1899; one male, mouth of the Rumpin River, Pahang, May 20, 1902.

He gives the soft parts as: Iris dark brown; bill deep red, tip yellow; feet yellow, claws black or horny blue; wattles orange, yellow beneath.

The females are smaller, with less heavy bills. The specimens from Trang, Nakon Sritamarat, and Bandon have less heavy bills than more southern examples but on the whole are nearer *religiosa* than *intermedia.*

Three males from Patani and Pahang measure: Wing, 181–183.5 (182.2); tail, 80–84 (82.5); culmen, 27.5–29 (28.3 mm). Four females from Patani and Patalung: Wing, 161–179 (168.5); tail, 76–84 (79.2); culmen, 26–30 (27.4). Nine females from Pulo Langkawi north to Bandon: Wing, 165–180 (172.2); tail, 73–81 (76.6); culmen, 26–30 (27.6).

Unfortunately no adult males are available north of Patalung. While the measurements show little difference between the two groups of females, the more northern group appear to have slenderer bills.

G. r. religiosa differs from *G. r. intermedia* in its heavier bill and in having the line of velvety feathers behind the eye extend down until it meets or almost meets the feathers of the side of the neck, almost if not quite, cutting off the bare space below the eye from the extension of the lappets from the nape to the side of the head.

The range of *G. r. religiosa* extends from Bali to Java, Borneo, the Natuna Islands, Sumatra, and the Malay Peninsula north to Bandon.

Robinson and Kloss [72] record it from Pulo Tioman and the Langkawi group. Robinson [73] from Pulo Dayang Bunting, Langkawi, Koh Muk, Pulo Lontar, and Terutau; and under *Eulabes intermedius* from Koh Samui and Koh Pennan (Pangan).[74]

It is evidently a common bird in Peninsular Siam from Bandon south into the Malay States.

GRACULA RELIGIOSA INTERMEDIA A. Hay

Gracula intermedia A. HAY, Madras Journ. Lit. Sci., vol. 13, pt. 2, p. 157, 1844 (northern India).

One male and three females, Doi Nangka, November 20, 1930; three males and two females, Khun Tan, August 27 and September 7, 1930; one female, Mekhan, February 6, 1932; one female, Huey Me Sae, December 24, 1932; one male, Knong Phra, April 14, 1929; one male and one female, Lomkao, February 21, 1934; one male and one female, Pol, Korat, February 16, 1929; one male, Konken, March 21, 1929; one male and one female, Pak Chong, February 8, 1925, June 22, 1934; one male, Pang Sok, August 27, 1926; two males and one female, Sakeo, near Krabin, May 3, 8, 1928; one male and one female, Ban Sadet, near Sriracha, May 27, 29, 1925; one female, Huey Yang, Sriracha, August 4, 1932; four males and six females, Nong Khor, near Sriracha, November 13, 1924, September 28, 29, 1925, May 21–26, and November 13, 1926, February 5, 1927; one male, Ban Tarn Dam, near Sriracha, March 3, 1930; one female, Ban Han, Udon, March 18, 1929; one male and three females, Koh Chang, January 5 and 12, 1926.

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[72] Ibis, 1911, p. 67.

[73] Journ. Federated Malay States Mus., vol. 7, p. 185, 1917.

[74] Journ. Federated Malay States Mus., vol. 5, p. 150, 1915.

Dr. Smith gives the colors of the soft parts as: Iris dark brown; bill red; wattles and feet yellow.

Dr. W. L. Abbott collected a female at Boyces Point, Tenasserim, February 9, 1904.

This form is distinguished from *G. r. religiosa*, of the Malay Peninsula, by the slenderer bill and by the narrow, club-shaped line of feathers from the posterior border of the eye not reaching the feathers on the side of the neck by a considerable interval, therefore not dividing the bare space on the side of the head from the bare space on the crown. This latter character is not always constant; there are a few specimens in the above series that have this narrow line of feathers reaching those on the side of the neck, as in *G. r. religiosa*.

Ten males from Siam proper measure: Wing, 160–168 (164.7); tail, 72.5–80 (77); culmen, 24.5–27.5 (26) mm. Ten females: Wing, 158.5–170 (163.9); tail, 73–77 (74.9); culmen, 25–28 (26.3) mm.

G. r. intermedia is common all over Siam proper, but how far it extends southward in Peninsular Siam is not so definitely known. Robinson and Kloss[75] refer specimens from Ghirbi and Junkseylon to this form, which must be about the limit of its range in this direction.

The form ranges in the Himalayas from Kuman to eastern Assam, Burma, southern China, south to Tenasserim, and Siam and east to Cochinchina.

LAMPROCORAX PANAYENSIS HALICTYPUS Oberholser

Lamprocorax panayensis halictypus Oberholser, Journ. Washington Acad. Sci., vol. 16, p. 516, 1926 (Telibon Island, Trang, Peninsular Siam).

One adult male, one adult female, and one immature female, Bangnara, Patani, May 9 and June 8, 1924; three males (adult) and one immature female, Nakon Sritamarat, September 30 and October 1, 1926; two adult males, one adult female, and one immature male, Sichol, Bandon, May 16, 17, 1930; one adult male, three adult females, and two immature males, Koh Pangan, off Bandon, July 23–27, 1931. Dr. Smith gives the soft parts as: Iris red; bill and legs black.

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[75] Journ. Nat. Hist. Soc. Siam, vol. 3, p. [illegible]7, 1919.

Dr. W. L. Abbott collected the following in Trang: One adult male, three adult females and two immature males, Telibon Island, March 1, 1896; one male, Prahmon, March 4, 1896; one adult female, Katany, January 15, 1897; one adult female, Trang, December 28, 1898. He gives the soft parts as: Iris bright red; bill black; feet brownish black (adult); iris light red (young).

The series from the Malay Peninsula has slightly longer wings than a small series from Java; Bornean birds are hardly, if at all, different from the latter, however. I have examined only one male from Sumatra, and it has a longer culmen than any measured from Peninsular Siam, almost if not quite equaling specimens from Pulo Taya (*L. p. richmondi* Oberholser), but the wing is shorter.

Eight males from Peninsular Siam measure: Wing, 98–102 (100.4); tail, 59–66.5 (63); culmen, 15.5–18.5 (17) mm. Ten females: Wing, 93.5–102 (97.8); tail, 57.5–63 (59.3); culmen, 16.5–18 (17.2) mm. Seven males from Java: Wing, 92–99 (95.3); tail, 59–62.5 (60.2); culmen, 16–18 (17) mm. Six males from Borneo: Wing, 94.5–99 (96.6); tail, 60–63 (61.2); culmen, 16–18 (17) mm. Two males from Pulo Taya: Wing, 108.5–110; tail, 69–72; culmen, 19–19.5 mm. One male from eastern Sumatra: Wing, 99; tail, 63; culmen, 19 mm. One male from Banka: Wing, 97; tail, 60.5; culmen, 17 mm.

L. p. halictypus ranges from the Malay States north through Peninsular Siam to southern Tenasserim. It has been reported as far north in Peninsular Siam as Mamoh by Robinson and Kloss.[76] Robinson [77] records it from Koh Samui and Koh Pennan (Pangan).

The species is split up into a number of nominal races, the majority of them inhabiting islands and not being found, as a rule, far from the sea, though there are two or three mountain species known.

STURNIA SINENSIS (Gmelin)

Oriolus sinensis Gmelin, Systema naturae, vol. 1, p. 394, 1788 (China).

Two males, Bangkok, March 7 and October 23, 1924; one male, Vichienburi, February 26, 1934; one unsexed, Rayasothon, March 23, 1929; one male, Nakon Sritamarat, November 22, 1923.

A pair was received through Dr. W. L. Abbott and collected by C. Boden Kloss at Tanjong Kalong, Singapore, February 26, 1900.

The species breeds in southeastern China and northern Indo-China and winters in the southern Indo-China countries, Burma, Siam, the Malay Peninsula, and the Philippines.

Williamson [78] says that they occur at Bangkok from September until February and a few remain as late as April. Robinson and Kloss [79] state that Williamson has a series of this species from Petchaburi,

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[76] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 354, 1924.

[77] Journ. Federated Malay States Mus., vol. 5, p. 151, 1915.

[78] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 202, 1915.

[79] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 355, 1924.

Nongkae, and Koh Lak, southwestern Siam, and from Huey Sak, Peninsular Siam. De Schauensee [80] secured specimens at Bangkok, Hua Mak, and Chantabun. Deignan [81] observed it between Ban Tapui and Ban Sam Ngao, the only record for northern Siam.

STURNIA MALABARICA NEMORICOLA Jerdon

Sturnia nemoricola JERDON, Ibis, 1862, p. 22 (Thayetmyo, upper Burma).

One male and one female, Doi Tin Pata, December 26, 1932; also one male, Vientiane, Laos, February 20, 1929.

In the above three specimens only the winglet is white; the primary coverts are black, except the first (spurious primary). In three specimens from southern Annam, one has the primary coverts black, one has the primary coverts black with the bases of some of the feathers white, and one has part of the primary coverts black and part of them white. A male in the United States National Museum from Raheng has the winglet and the primary coverts white and is the only specimen in the above series that has. Evidently this is a very variable character. In fact, no two of the seven specimens mentioned are exactly alike. My series is not extensive enough, however, for me to determine whether the differences are due to age or season.

Gyldenstolpe [82] took a specimen at Khun Tan; Williamson [83] reports it from Bangkok; Baker [84] from Krabin. Deignan [85] found a pair nesting near Chiengmai in June; Chasen and Kloss [86] report a pair from Raheng; Lowe [87] found it at Umpang, 1,500 feet, January 25; de Schauensee [88] found it very common at Chiengmai in December on his third expedition.

The form is said to be more or less local in Siam. It ranges from the Kachin Hills and southern Shan States to Peninsular Burma, Siam, and Indo-China.

AGROPSAR STURNINA (Pallas)

Gracula sturnina PALLAS, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, pp. 210, 695, 1776 (Dauria).

One male and two females, Nakon Sritamarat, September 29, 1926.

The following were received from Dr. W. L. Abbott: Two males, Tanjong Kalong, Singapore, February 26, 1900; one female, Packa River, Trengganu, September 25, 1900; one male, Victoria Point, Tenasserim, March 31, 1900.

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[80] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 233, 1934.

[81] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 134, 1936.

[82] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 25, 1916.

[83] Journ. Nat. Hist. Soc. Siam, vol. 1, pp. 197, 203, 1915.

[84] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 211, 1919.

[85] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 151, 1931.

[86] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 182, 1928.

[87] Ibis, 1933, p. 278.

[88] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 233, 1934.

The species breeds in eastern Siberia and northern China and winters in southern China, Burma, Siam, and the Malay Peninsula.

Baker [89] records it from Krabin; Robinson and Kloss [90] state that Williamson informed them that C. J. Aagaard collected a specimen at Bangnara, Patani, November 2, 1916.

Gyldenstolpe [92] observed two in a garden at Klong Toi, near Bangkok, but does not give the date. Evidently it is not a common winter visitor.

AMPELICEPS CORONATUS Blyth

Ampeliceps coronatus Blyth Journ. Asiat. Soc. Bengal, vol. 11, p. 194, 1842 (Tenasserim).

Three adult males, three adult females, and one immature female, Nong Khor, near Sriracha, March 21, 1926, February 8, 1927; one adult male, Nong Nam Kiew, February 15, 1927.

The immature female taken February 8 is nearly adult size. It is like the adult except that there are only a few yellow feathers on the throat and crown and the speculum of the wing is a lighter color.

Gyldenstolpe [93] took a male at Pak Koh, March 26, and reports it fairly common in northern Siam. Baker [94] reports it from Hinlap, eastern Siam, and Klong Bang Lai, Peninsular Siam; Lowe [95] from 30 miles southeast of Umpang; Robinson and Kloss from Trang [96] as well as Ghirbi [97]; de Schauensee [98] from Pak Chong.

The species ranges from eastern Bengal to Assam, Burma, Tenasserim, and Siam, south in the Peninsula to Trang and east to southern Laos, Cochinchina, and Annam.

GRACUPICA NIGRICOLLIS (Paykull)

Gracula nigricollis Paykull, Kungl. Svenska Vet.-Akad. Handl., vol. 28, p. 291, pl. 9, 1807 (China).

Two males, Pran, June 3, 1928, April 2, 1931; two males, Ban Pong, September 17, 1929; two adult males, two immature males, four adult females, and one immature female, Bangkok, July 22 and October 11, 13, 1924, September 11–14, October 31, and December 21, 1925; two males and one female, Muang Kanburi, September 10, 11, 1928; one male, Tha Chang, November 23, 1925. One egg cut from the oviduct, Bangkok, April 3, 1926.

The immature specimens are brown above with a light brown head and throat. Then the back begins to become dark; next the hindneck and jugulum begins to become blackish, but the head does not become entirely white for some time, and even apparently adult birds have a brownish tinge occasionally on the pileum.

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[89] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 211, 1919.

[90] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 356, 1924.

[92] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 26, 1916.

[93] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 24, 1916.

[94] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 211, 1919.

[95] Ibis, 1933, p. 276.

[96] Ibis, 1911, p. 68.

[97] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 117, 1919.

[98] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 234, 1934.

This seems to be a common bird practically all over Siam proper and in the southwestern part of the country as far as Koh Lak. Herbert[99] says it is a common breeding bird at Bangkok in the paddy field area, the nesting season extending over several months from the commencement of the rains.

The species ranges from southern China to Indo-China, Siam, the Shan States of Burma, and Tenasserim.

GRACUPICA LEUCOCEPHALA (Giglioli and Salvadori)

Acridotheres leucocephalus GIGLIOLI and SALVADORI, Atti Accad. Sci. Torino. vol. 5, p. 273, 1870 (Thu-doc, French Cochin-China).

Three females, Muang Kanburi, September 10, 11, 1928; one female, Sikeu, near Korat, February 16, 1926; one male and one female, Pak Chang, May 6, 1925. December 22, 1926; one male and one female, Tha Chang, March 21, 1927; one male, Huey Yang, Sriracha, July 31, 1932; one female, Ban Tarn Dam, March 6, 1930; one female, Kumpawapi, March 20, 1929.

Only four out of the above 11 specimens have the spurious primary entirely white; the remainder have the tip and outer web more or less black. A pair from the Raheng district in the United States National Museum has the spurious primary entirely white, making 6 out of 13 specimens with an entirely white spurious primary. This does not seem to me to be a very reliable character.

Very few of the specimens have the head entirely white; in most it is drab or hair brown, which seems to be due to stain. In one it is almost tawny-olive and in another almost wood brown; in these two it seems to be more or less natural.

For these reasons I do not believe *G. l. annamensis* Wells or *Poliopsar cambodianus* Sharpe can be regarded as valid forms.

The species ranges from Annam through southern Indo-China to southern, western, and southwestern Siam, southern Tenasserim, and the Shan States.

In Siam Gyldenstolpe[1] reports it not uncommon at Koh Lak; Baker[2] records it from Krabin; Chasen and Kloss[3] from the Raheng district; Kloss[4] from Lat Bua Kao and Koh Lak; Lowe[5] from 20 miles west of Kempempet; de Schauensee from Nongkhae,[6] Nakorn Nayok,[7] Tamuang, Bua Yai, and Sriracha.[8] Deignan observed it between Ban Tapui and Ban Sam Ngao, the only record for northern Siam.[9]

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[99] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 110, 1923.

[1] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 24, 1916.

[2] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 22, 1919.

[3] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 183, 1928.

[4] Ibis, 1918, p. 223.

[5] Ibis, 1933, p. 278.

ACRIDOTHERES TRISTIS TRISTIS (Linnaeus)

Paradisea tristis Linnaeus, Systema naturae, ed. 12, p. 167, 1766 (Philippines).

Four males and one female, Bangkok, October 14, 24, 1924, December 19, 30, 1925, May 14, 1934; one female, Lomkao, February 20, 1934; one male, Pak Chong, November 17, 1925; two males and two females, Knong Phra, Pak Chong, April 10–14, 1929; one female, Patalung, July 10, 1929.

This form is thought to have been introduced into Siam, but I have seen no records of its introduction. Be this as it may, it is apparently rather common over the whole country at present. Herbert [10] says that in 1919 it was found breeding by his collector only at Hua Takhae on the Petrieu line and that eggs were taken on June 10 and 16; there is a note by the editors that the form has since become a common breeder at Bangkok from March onward. Aagaard [11] has a note that a single pair at Bangkok laid nine clutches of eggs in the same nest from March 25 to August 28. Just what its status is in Peninsular Siam it is hard to say. Robinson and Kloss [12] record three males from Nam Chut taken February 24, 25. Dr. Smith's specimen from Patalung is the southernmost record for the Peninsula to date known to me.

The form ranges all over India and east to Burma, Yunnan, Siam, Cambodia, Laos, and Annam. It has been introduced into many parts of the world.

AETHIOPSAR FUSCUS TORQUATUS (Davison)

Acridotheres torquatus Davison, Ibis, 1892, p. 102 (Pahang).

Seven males and three females, Nakon Sritamarat, September 6, 1924, September 28, 29, 1926; and one male, Haad Yai, July 12, 1929.

Most of this series are immature but of about adult size. Two of the immature, taken September 28 and 29, may be described as follows: Youngest—drab above and on the throat and chest; breast, belly, and under tail coverts white; the sides and flanks have already molted into the neutral gray of the first winter plumage. The other is farther advanced and has only the head and throat partially drab; below there is no white at all, as the under tail coverts have been molted and not replaced. The remainder of the immatures are like the adult but grayer above and with less buff on the breast and belly.

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[6] Proc. Acad. Nat. Sci. Philadelphia, vol. 80, p. 558, 1928.

[7] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 559, 1930.

[8] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 234, 1934.

[9] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 134, 1936.

[10] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 111, 1923.

[11] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 313, 1924.

[12] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 357, 1924.

Dr. W. L. Abbott collected two males and one female in Trang (Prahmon, April 2, 1896; and Lay Song Hong, November 19, 1896). He gives the soft parts as: Iris yellow; bill yellow, base black; feet yellow or brownish yellow.

The adults are grayer, less brownish, and the buff below is lighter and less extensive, except the under tail coverts, which are deeper buff when compared with *A. f. fuscus* of India, which is considerably larger.

A. f. torquatus ranges from the Malay States north through Peninsular Siam to southern Tenasserim.

Bonhote [13] records it from Patalung and Patani; Ogilvie-Grant [14] from Patani; Robinson and Kloss [15] from Trang. They state that it is not found south of Selangor. Robinson [16] says that it extends north to the Isthmus of Kra.

AETHIOPSAR GRANDIS GRANDIS (Moore)

Acridotheres grandis Moore, *in* Horsfield and Moore, A catalogue of the birds in the Museum of the Hon. East India Company, vol. 2, p. 537, 1856–58 (Sumatra, error; Tenasserim).

One male and one female, Muang Kanburi, April 10, 14, 1928; one male, Nan, April 13, 1930; one male, Bung Borapet, March 22, 1933; one female, Sikeu, near Korat, February 15, 1926; one female, Lat Bua Kao, August 10, 1929; four males and one female, Pak Chong, April 25, 26, 1926; one female, Sakeo, near Krabin, May 9, 1928; one male and one female, Nong Khor, March 23, 1926; one unsexed, Kao Lem Sing, Chantabun, June 8, 1926.

The female taken at Lat Bua Kao, August 10, is immature but about adult size. It is molting into the first winter plumage and has nearly completed the process, except for the head, wings, tail, and a streak down the center of the breast. The head and throat are fuscous, and a streak of this color runs down the breast to the anus; the rest of the body plumage is a new and a much lighter gray than that of the adult; the outer secondaries and some of the lesser and greater wing coverts are new. The specimen wears a lighter livery than the adult, and this must be considered in comparing specimens.

The form ranges practically all over Siam proper and in the southwestern part of the country as far as Koh Lak.

Herbert [17] secured five sets of eggs taken in June and July at Ayuthia, Samkok, Hua Takhae, and the Tachin side.

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[13] Proc. Zool. Soc. London, 1901, vol. 1, p. 66.

[14] Fasciculi Malayenses, pt. 3, p. 67, 1905.

[15] Ibis, 1911, p. 68.

[16] The birds of the Malay Peninsula, vol. 1, p. 283, 1927.

[17] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 112, 1923.

The form ranges from southwest Burma to eastern Burma, Tenasserim, Siam proper, Yunnan, and Indo-China.

A closely related form, *A. g. infuscatus* Baker, is found in northern Burma and eastern Assam. *A. javanicus* (Cabanis), of Java, is a distinct species in my opinion, a much lighter gray, and separated by a long stretch of country where another species takes its place.

STURNOPASTOR CONTRA FLOWERI Sharpe

Sturnopastor floweri SHARPE, Bull. Brit. Orn. Club, vol. 7, p. 17, 1897 (Tachin and Tahkamen, central Siam).

Two males, Nan, April 13, 15, 1930; one male, Prae, April 26, 1930; one male, Ban Pong, September 17, 1929; one male, Muang Kanburi, April 14, 1928; nine males and eight females, Bangkok, October 7, 25, 1924, September 14 and October 24–31, 1925, April 7 and September 6, 1926.

A pair taken at Bangkok April 7 are young of the year not fully grown. They are brownish black above, on the throat, and chest; superciliary, anterior ear coverts, and chin, white; otherwise resembling the adult. Another immature pair, taken September 6 and 17, have assumed the glossy black of the adult, except on the head, throat, and part of the remiges, the brown of previous plumage still remains. Another pair taken September 6 and 14 has about acquired the glossy black plumage of the adult and even some of the peculiar white feathers are coming in on the forehead.

Dr. Smith also took an adult male at Moulmein, Burma, February 3, 1933. This specimen differs from the Siamese series in having the back dark brown and the breast grayish white and evidently belongs to *S. c. superciliaris*. One of the males from Nan has a brownish wash to the back and approaches this Moulmein male but still has a black sheen and is really intermediate. The other male from Nan is typical *floweri* and so is the male from Prae. I am therefore of the opinion that the birds from northern Siam should all be placed under *floweri*, or else they are intermediate.

S. c. floweri is found practically all over Siam proper and in the southwest as far as Koh Lak. Williamson [18] has recorded it from Chantabun, but I have seen no records from eastern Siam. In the north it is said not to be common. Herbert [19] states that it is a common breeder in central Siam, nesting from April to July. He describes the nest and eggs.

The form ranges from eastern Tennasserim through Siam to northern Laos.

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[18] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 206, 1915.

[19] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 112, 1923.

Family NECTARINIIDAE: Sunbirds

CHALCOSTETHA CALCOSTETHA CALCOSTETHA (Jardine)

Nectarinia calcostetha Jardine, The natural history of the Nectariniadae, p. 263, 1843 (East India Islands: Java).

Dr. W. L. Abbott collected five males and three females, Singapore Island, May 18–28, 1899, October 15, 19, 1899, March 4, 1900; one male and two females, Tandjong Laboha, Trengganu, September 30, 1900; one male, Kemamun, Trengganu, October 1, 1900; and one male, Pulo Terutau, Peninsular Siam, November 9, 1903.

This sunbird has been taken in Siam only at Junkseylon, Trang, and Pulo Terutau. Robinson[20] gives the range as Malay Peninsula from Singapore north to southern Tenasserim, south and central Siam, Sumatra, Java, and Borneo. For some reason this bird appears uncommon north of the Malay States. It seems to be an inhabitant of small islands rather than the mainland.

AETHOPYGA SIPARAJA SIPARAJA (Raffles)

Certhia siparaja Raffles, Trans. Linn. Soc. London, vol. 13, p. 299, 1822 (Sumatra).

Two males, Bangnara, Patani, July 13, 18, 1926.

Dr. W. L. Abbot collected three adult males, one immature male, and three females on Singapore Island, May 12–25, 1899; one adult male, Kemamun, Trengganu, October 1, 1900.

This form ranges from Sumatra and the Rhio Archipelago north through the Malay States to Patani.

Robinson and Kloss[21] say that the northernmost examples they possess, belonging undoubtedly to it, come from Penang, but that it may occur in Patani. Their supposition is correct, and the two males collected there by Dr. Smith agree with males from Singapore.

The form differs from the next (*A. s. cara*) in having the breast fuscous or blackish.

AETHOPYGA SIPARAJA CARA Hume

Aethopyga cara Hume, Stray Feathers, vol. 2, p. 473, 1874 (south of Moulmein, Tenasserim).

Eight males, Koh Chang, January 9–15, 1926; one male and one female, Koh Kut, May 21, 22, 1929; two males and two females, Kao Seming, Krat, October 10–15, 1928; two males, Kao Sabap, January 5, 9, 1930; four males and one female, Nong Khor, near Sriracha, November 19, 1924, September 27–October 1, 1925; one immature male, Lat Bua Kao, August 6, 1929; two males, Hupbon, November 3, 5, 1931; two males, Sikeu, near Korat, February 16, 1926; one female, Lam Klong Lang, near Pak Chong, June 4, 1925;

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[20] The birds of the Malay Peninsula, vol. 1, p. 299, 1927.

[21] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 373, 1924.

one male, Muek Lek, April 26, 1933; five males, Aranya, July 12–17, 1930; one male, Nong Mong, Krabin, August 25, 1925; one male, Nakon Nayok, November 16, 1929; one male, Nong Yang, November 4, 1931.

Dr. W. L. Abbott collected six males (one immature) and one female in Trang, March 6, 1896 and March 4, 1897, January 5–27, 1899; one female, Victoria Island, Tenasserim, January 5, 1900; one immature male, Maliwun, Tenasserim, March 25, 1900; and one male, Chance Island, Mergui Archipelago, December 31, 1899.

The specimens from Trang can be matched by others from northern and southeastern Siam and evidently belong to the same form.

Five males from Trang measure: Wing, 51–54.5 (53.3); tail, 40–44 (41.8); culmen, 15–17 (16.3) mm. Ten males from northern and southeastern Siam: Wing, 51.5–56 (54.5); tail, 40.5–46.5 (44); culmen, 15.5–17 (16.3).

The form ranges from eastern Siam to southeastern Siam and through Peninsular Siam at least to Trang, Tenasserim, and southern Burma.

Gairdner [22] has recorded it from Ratburi and Petchaburi. It also occurs probably on all the islands of the Gulf of Siam and on the west coast of Peninsular Siam from Terutau and Langkawi northward. Robinson records it from Koh Samui,[23] off Bandon, and from Koh Chang and Koh Kut.[24]

AETHOPYGA SIPARAJA SEHERIAE (Tickell)

Nectarinia seheriae TICKELL, Journ. Asiat. Soc. Bengal, vol. 2, p. 577, 1833 (near Seheria, Borabhum).

Two males, Ban Nam Kien, Nan, April 18, 20, 1930.

The two males from Nam Kien are more or less intermediate but nearer to *seheriae*.

A. s. seheriae ranges in the foothills of the Himalayas from Kuman to eastern Bengal, Assam, Laos, and northern Siam.

Deignan [25] records it as rare at Chiengmai from December to June.

AETHOPYGA TEMMINCKII (S. Müller)

Nectarinia temminckii S. MÜLLER, Verhandelingen over de natuurlijke Geschiedenis der Nederlandsche overzeesche bezittingen . . . p. 173, footnote, 1843 (Mount Singalang, Sumatra).

Dr. W. L. Abbott collected a male in Trang, January 27, 1897.

This specimen was mentioned by Dr. C. W. Richmond.[26] Robinson and Kloss [27] secured a male in the hills above Chong, Trang, December

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[22] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 149, 1915.

[23] Journ. Federated Malay States Mus., vol. 5, p. 151, 1915.

[24] Ibis, 1915, p. 757.

[25] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 124, 1936.

[26] Proc. U. S. Nat. Mus., vol. 22, p. 319, 1900.

[27] Ibis, 1911, p. 75.

1909. These are the only two specimens taken in Peninsular Siam, which is the northern limit of its range.

The species ranges from Borneo and Sumatra northward through the mountains of the Malay States to Trang, Peninsular Siam.

It may be distinguished from all other species occurring in Siam by having the upper surface of the tail red, a little lighter than the back; below it resembles *A. s. cara*.

A. temminckii has been made a form of *A. mystacalis*, of Java, by some recent authors, a species to which it is only related generically. *A. mystacalis* has the exposed surface of the tail above metallic purple while in *A. temminckii* it is nonmetallic red, and there are other differences.

AETHOPYGA DABRYII DABRYII (Verreaux)

Nectarinia dabryii Verreaux, Rev. Mag. Zool., p. 173, pl. 15, 1867 (Szechwan).

One female, summit of Doi Sutep, December 15, 1928; one female, Khun Tan, September 8, 1930; one adult male and one immature male, Doi Nangka, November 4, 11, 1930.

The immature male taken on Doi Nangka, November 4, 1930, is in a plumage resembling the female, but more yellowish on the belly; some red feathers of the adult plumage are coming in on the back, wing coverts, sides of head, and breast.

The first specimen recorded from Siam was taken at Khun Tan by Count Gyldenstolpe.[28] Since then it has been taken at Chiengmai [29] and Doi Sutep,[30] 5,500 feet, and Chiengdao [31] by de Schauensee.

This is a common breeding bird in Szechwan and Yunnan, China, and it has been taken in northwestern Tonkin, northern Laos, northern Siam, and Burma as far south as Muleyit. Whether it is resident in Siam or only a winter visitor is open to question. Deignan [32] reports that it occurs on Doi Sutep in the cold weather. In a large series of the form in the United States National Museum from western Szechwan and western Yunnan, there is only one specimen taken in winter. This seems to show that the majority must move farther south.

From below the form resembles somewhat *A. nipalensis angkanensis*, but the red of the chest comes right up to the color of the throat, and the throat and pileum are a shining violet-purple instead of dark green. *A. n. angkanensis* has a narrow yellow band across the chest below the throat patch. There are numerous other differences, but the above will suffice.

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[28] Ibis, 1920, p. 462.

[29] Proc. Acad. Nat. Sci. Phila., vol. 80, p. 561, 1928.

[30] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 563, 1930.

[31] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 241, 1934.

[32] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 155, 1931.

AETHOPYGA SANGUINIPECTA SANGUINIPECTA Walden

Aethopyga sanguinipecta WALDEN, Ann. Mag. Nat. Hist., ser. 4, vol. 15, p. 400, 1875 (Tonghoo Hills, Burma).

One male, Doi Sutep, 3,000 feet, December 15, 1928; two males, Khun Tan, 4,000 feet, September 8, 1930, February 22, 1932; two males, Doi Nangka, November 8, 10, 1930; one male, Doi Hua Mot, August 23, 1934.

A. s. wrayi occurs in the mountains of the Malay States but apparently has not been taken as far north as Peninsular Siam. It is similar to *A. s. sanguinipecta* but is darker on the breast and belly, the red striations on the chest are less extensive, the yellow rump band is narrower, and the blue of the head and tail is more purplish.

Williamson[33] reports *sanguinipecta* from Muang Wang, northern Siam. De Schauensee[34] reports it very common on Doi Sutep and descending to the level of the plain at Chiengsen; on this third expedition[35] he found it common at Chiengmai (Doi Sutep), Khun Tan, and Chiengdao; Deignan[36] states that on Doi Sutep it occurs between 3,500 and 5,500 feet.

The form ranges from Yunnan through the southern Shan States, Burma, to Muleyit in Tenasserim, northern Siam, Laos, Tonkin, Annam, and Cambodia.

AETHOPYGA ANOMALA Richmond

Aethopyga anomala RICHMOND, Proc. U. S. Nat. Mus., vol. 22, p. 318, 1900 (Kao Song, Trang, Peninsular Siam).

Dr. W. L. Abbott collected nine males and six females in Trang (Kao Nom Plu, 3,000 feet, February 20, 26, 1897; Kao Song, 2,500 feet, March 2, 1897; Kao Nok Ram, 3,000 feet, January 10, 13, 1899; and Kao Soi Dao, 2,500 feet, February 9, 1899).

Apparently no one has taken this form since Dr. Abbott collected the above series.

It is quite distinct from *A. saturata* and I believe it is not a form of that species at all but should be recognized as distinct. It differs from *A. saturata* in smaller size, in the darker maroon back, and the lack of a yellow rump band. It differs from *A. sanguinipecta wrayi* in the darker maroon of the back, in lacking the yellow rump band, and in the fewer or absence of the red streaks on the chest; the size is about the same.

The red streaks on the chest in the male of *A. anomala* are present in only two of the males before me, and they are very faint. The female of *A. anomala* resembles the female of *A. saturata*, but is smaller and has a narrower yellow rump band. I have not examined a female of *A. wrayi*.

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[33] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 23, 1918.

[34] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 563, 1929.

[35] Proc. Acad. Nat. Sci. Philadelphia vol. 86, p. 241, 1934.

[36] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 155, 1931.

Eight males measure: Wing, 49–51.5 (50.4); tail, 49–67 (53.9); culmen, 16–18 (16.7) mm. Five females: Wing, 43–47.5 (45.4); tail, 30–35.5 (32); culmen, 15–16.5 (15.7) mm. There is great variation in the length of the tail in the males. In some specimens it is long, drawn out, and very attenuated at the tip for about half its length; in others it is shorter and not so attenuated at the end, but broader. I rather think the latter are younger males.

AETHOPYGA NIPALENSIS ANGKANENSIS Riley

Aethopyga nipalensis angkanensis RILEY, Proc. Biol. Soc. Washington, vol. 42, p. 162, 1929 (Doi Angka, Siam).

Two males and one female, Doi Angka, 8,000, 8,400 feet, December 5 and 6, 1928.

This form is similar to *A. n. nipalensis*, but the chest is grenadine red unstreaked.

As the description may not be accessible to Siamese ornithologists, it is given as follows: Head, nape, hindneck, throat, and ear coverts a shining invisible green; a line from bill on sides of face dusky; a band on chest below green of throat lemon chrome; chest and breast grenadine red; belly sulphine yellow; under tail coverts apricot yellow with a slight reddish tinge, sides lemon chrome; back and running up as a band to sides of neck morocco red; rump lemon-chrome; tail blackish, the middle feathers, except at tip, and the outer feathers basally on the outer web a shining invisible green, two outer feathers with yellowish citrine tips; tail coverts like central tail feathers; wing coverts outwardly and scapulars olive-citrine, the wing coverts tinged with reddish; remiges fuscous, all, except the outer, bordered on the outer web with olive-citrine, the inner feathers tinged with english red. Type: Wing, 52.5; tail, 59.5; culmen, 18 mm.

The second male is like the type. Wing, 54.5; tail, 65.5; culmen, 19 mm.

The female (wing, 47.5; tail, 43, culmen, 16 mm) is like the same sex of *nipalensis*, but the head and throat are tinged with grayish and the secondaries are more deeply colored (near orange citrine instead of citrine) on the outer web.

Dr. Smith secured only the three specimens at the type locality. It is evidently a high mountain form and will probably also be found on some of the high mountains of Burma.

It is a different looking race from *nipalensis* and could even rank as a species, except that it evidently belongs to the same form group.

Mr. Deignan informs me that he also secured specimens on Doi Angka.

Robinson and Kloss [37] described *A. n. australis* from Kao Luang, Nakon Sritamarat.

LEPTOCOMA BRASILIANA PHAYREI (Blyth)

Nectarinia phayrei Blyth, Journ. Asiat. Soc. Bengal, vol. 12, p. 1008, 1843 (Arracan).

Five males, Bangnara, Patani, May 16, 1924, July 14, 20, 1926; two males, Yala, Patani, February 1, 1931; one male, Thalo, Bandon, September 13, 1931; two immature males and two immature females, Koh Pangan, July 25–31, 1931; one male, Lem Sing, Chantabun, June 14, 1926; two males, Kao Sabap, Chantabun, January 5, 1930; November 6, 1933; two males and one female, Kao Seming, Krat, October 11, 15, 1928; one male, Nakon Nayok, November 16, 1929; four males and one female, Koh Chang, April 5, 1924, January 8–15, 1926.

Dr. W. L. Abbott collected eight males and one female in Trang (Prahmon, February 23 and March 4, 1896; Tyching, August 9, 1896; Lay Song Hong, September 25, 1896; Trang, January 4, 1897, March 4, 1899); one male, Pulo Langkawi, December 8, 1899; two males, Pulo Adang, Butang Islands, December 15 and 17, 1899; one male and one female in Tenasserim (Tanjong Badak, January 7, 1900, and Bok Pyin, February 11, 1900); one male and two females, Helfer Island, Mergui Archipelago, March 5, 6, 1900; two males, Singapore Island, May 18 and 21, 1899.

All the males with two or three exceptions, from the Malay Peninsula and more northern localities in Siam have the rump violet-purple or a shining coppery green with a violet iridescence. Two males from Java (*brasiliana*) have the rump a shining dusky green-blue. Two or three of the males from the Malay-Siamese series have the rump green, yet there is a slight purple iridescence in certain lights and the green is not exactly the same as in the Java males.

The four immature specimens (two males and two females) from Koh Pangan are grayer on the back and deeper yellow below than the adult females; one of the males has a single metallic-green feather appearing on the side of the nape.

L. b. phayrei ranges from the southern end of the Malay Peninsula northward to southern Burma and southern Siam.

Robinson and Kloss [38] report that it is commoner in the north of the Peninsula, especially near the sea and on islands, than it appears to be in the south. Dr. Smith did not find it in northern Siam, nor are there any records that I am aware of from that part of the country, but it occurs in southeastern Siam and will probably be found eventually near the coast in southern Siam.

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[37] Bull. Brit. Orn. Club, vol. 44, p 14, 1923.

[38] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 376, 1924.

CYRTOSTOMUS FLAMMAXILLARIS FLAMMAXILLARIS (Blyth)

Nectarinia flammaxillaris Blyth, Journ. Asiat. Soc. Bengal, vol. 14, p. 557, 1845 (Tenasserim).

One male and one female, Nakon Sritamarat, September 16, 26, 1926; one male, Huey Yang, October 1, 1930; one male and one female, Koh Pangan, July 23, 1931; two males and one female, Koh Lak, June 6–24, 1933; one male and one female, Pran, April 1, 2, 1931; one male and one female, Muang Kanburi, April 9, 15, 1928; one male and one female, Ban Nam Kien, Nan, April 20, 1930; four males and 12 females, Bangkok, August 25, 1923, June 26, 1924, July 2, 1925, May 26, 31, and August 5, 1926, April 27–May 14, 1934; two males, Bung Borapet, June 24, 1932 and March 21, 1933; two males, Nong Kai, February 18, 1929; one male, Prae, April 10, 1930; five males and two females, Muck Lek, April 16–28, 1933; two males and one female, Sriracha, May 24, 1925 and April 19, 1934; one male and one female, Khlung, Chantabun, January 3, 1930; one male and one female, Chantabun, May 28, 1929; two males and one female, Lem Sing, Chantabun, June 8, 12, 1926; one male, Sakeo, near Krabin, May 3, 1928; one female, Kao Seming, Krat, January 2, 1930; two females, Koh Sichang, July 5, 1930; one female, Koh Chang, January 9, 1926.

Dr. W. L. Abbott collected four males in Trang (Prahmon, March 18–23, 1896; Trang, March 4, 1899); one male, Pulo Langkawi, December 4, 1899; one female, Pulo Nipis, Butang Islands, December 13, 1899; one male and one female, Pulo Adang, Butang Islands, December 16, 17, 1899; five males, Tenasserim (Victoria Point, January 3 and March 16, 1900; Victoria Island, January 5, 1900; Tanjong Badak, January 8, 1900); two males and two females, Mergui Archipelago (Sullivan Island, February 4, 1900; High Island, December 30, 1900).

Apparently there are no constant differences between Peninsular specimens and those from farther north in Siam.

The form ranges from Penang northward through Peninsular Siam to Tenasserim, and southern Burma eastward to Siam proper, Cambodia, southern Laos, Cochinchina, and southern Annam.

Herbert [39] says that it breeds in fruit gardens near Bangkok, nesting from January to September and occasionally in other months; Robinson records it from Koh Samui and Koh Pennan, off Bandon [40] and Terutau, Langkawi, Butang Islands, and Trang.[41] The only northern records I have seen are those of Count Gyldenstolpe [42] for Khun Tan and of de Schauensee [43] for Chiengmai and Chiengsen.

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[39] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 220, pl. 15, 1923.

[40] Journ. Federated Malay States Mus., vol. 5, 1915, p. 152.

[41] Journ. Federated Malay States Mus., vol. 7, p. 190, 1917.

[42] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 33, 1916.

[43] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 242, 1934.

It occurs all over Siam proper and Peninsular Siam. In the Andaman Islands a paler form with a longer bill occurs (*C. f. andamanicus*).

CYRTOSTOMUS FLAMMAXILLARIS HELIOBLETUS (Oberholser)

Cinnyris ornata helioblεta OBERHOLSER, Journ. Washington Acad. Sci., vol. 13, p. 230, 1923 (Tanjong Dungun, Trengganu).

Dr. W. L. Abbott collected one adult male (type), Tanjong Dungun, Trengganu, September 21, 1900; one immature male, Dungun River, Trengganu, September 20, 1900; one immature male, Kemamun River, Trengganu, October 2, 1900; one immature male, Tanjong Kalong, Singapore, October 21, 1899.

The type of this form is more yellowish citrine above than *C. f. flammaxillaris;* the brown pectoral band is reduced; and the pectoral tufts are smaller and much lighter, but there is no doubt that if recognized at all it is a race of this species. It lacks the metallic steely-blue forehead of *C. ornatus* and has the brown (though reduced) pectoral band of *C. flammaxillaris;* the upperparts are yellowish citrine, not olive lake as in *C. ornatus.*

If this race is to be recognized at all, I believe it must be confined to the Malay States.

ANTHREPTES MACULARIA MACULARIA Blyth

Anthreptes macularia BLYTH, Journ. Asiat. Soc. Bengal, vol. 11, p. 106, 1842 (Malacca).

Anthreptes nuchalis BLYTH, Journ. Asiat. Soc. Bengal, vol. 12, p. 980, 1843 (Singapore).

Dr. W. L. Abbott collected one male on the Dindings, Straits of Malacca, April 21, 1900; two males and two females, Tanjong Laboha, Trengganu, September 28 and 29, 1900; and one female, Rumpin River, Pahang, May 27, 1902.

This series when compared with a small series from Borneo is more greenish above and lighter yellow below. I have examined only one female from Sumatra; it resembles the Bornean form, but I have no doubt that upon examination of an adequate series from Sumatra the two will be found to be different.

It does not seem to be a common bird in Peninsular Siam. Ogilvie-Grant[44] reports it from Patani; Robinson and Kloss from Trang[45]; Junkseylon (Puket)[46]; Kao Nawng, Bandon[47]; and Kao Ram, 1,200 feet, Nakon Sritamarat.[48] De Schauensee[49] records taking a female at Chiengsen. This seems a considerable extension of range, if correctly determined.

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[44] Fasciculi Malayenses, pt. 3, p. 73, 1905.

[45] Ibis, p. 76, 1911.

[46] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 118, 1919.

[47] Journ. Federated Malay States Mus., vol. 5, p. 110, 1915.

[48] Journ. Federated Malay States Mus., vol. 11, p. 63, 1923.

[49] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 564, 1930.

A. m. macularia ranges from Tenasserim down Peninsular Siam to Singapore. In French Indo-China *A. m. lisettae*, with a much lighter throat and breast, is found.

ANTHREPTES SIMPLEX FRONTALIS (Blyth)

Nectarinia (v. *Anthreptes*) *frontalis* Blyth, Journ. Asiat. Soc. Bengal, vol. 14, pt. 2, p. 558, 1845 (Singapore).

One male, Bukit, Patani, January 25, 1931.

Dr. W. L. Abbott took one male, Chong, Trang, January 21, 1897; and one female, Trang, January 27, 1899.

These three specimens from Peninsular Siam are more yellowish citrine above than a single male of *A. s. simplex* from Sumatra and below more grayish on the throat. A single female of *A. s. simplicior* from Borneo is much paler below, more grayish than the female from Trang and yellowish only down the center of the breast and on the belly, the Trang female being greenish yellow from the chest downward. The type of *A. s. simplicior* resembles the Sumatran male above, but below it is grayer and the yellowish is restricted to the middle of the breast; the Sumatran specimen has the flanks as well as the breast and belly greenish yellow.

The two males from Patani and Trang measure (Patani male first): Wing, 60–62; tail, 46–46; culmen, 14.5–14 mm. The single female from Trang: Wing, 55; tail, 38; culmen, 13.5 mm. The single male from Sumatra: Wing, 65; tail, 49; culmen, 14.5 mm. The type of *A. s. simplicior* (Borneo): Wing, 65; tail, 51; culmen, 15 mm. The single female of *A. s. simplicior:* Wing, 60; tail, 45; culmen, 13 mm.

Robinson and Kloss[50] report *A. s. frontalis* from as far north in Peninsular Siam as Tung Pran, Takuatung, and Tasan, Chumporn.

The form ranges from Tenasserim south through Peninsular Siam to Singapore. It does not appear to be common anywhere, but this may be due to some peculiarities of its habits rather than an actual scarcity.

The male is citrine above, the forehead with a coppery green or blackish spot; below with the breast and belly light oil yellow, the throat grayish.

ANTHREPTES MALACENSIS MALACENSIS (Scopoli)

Certhia malacensis Scopoli, Deliciae florae et fauna insubricae, pt. 2, p. 91, 1786 (Malacca).

Two males and one female, Bangnara, Patani, July 12, 19, 1926; two males and one female, Bukit, Patani, January 25, 26, 1931; one male, Singora, June 29, 1929; one male and one female, Patalung, June 6, 10, 1929; one female, Tha Lo, Bandon, September 27, 1931;

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[50] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 380, 1924.

two males, Koh Samet, September 1, 1931; five males and five females, Koh Pangan, July 24–30, 1931; 11 males and 11 females, Bangkok, September 26 and October 13, 1923, March 13, 1924, July 2, October 29, and December 28, 1925, February 4, 6, May 25–31, and June 1–22, 1926, May 4, 8, 1934; two males, Lem Sing, Chantabun, June 8, 12, 1926; 19 males and eight females, Koh Chang, March 31–April 5, 1924, January 8–15, 1926, March 10, 11, 1930.

Dr. W. L. Abbott collected six males and two females in Trang (Prahmon, February 20–March 31, 1896; and Tyching, June 3, 1896); one male, Singapore Island, May 22, 1899; two males in Trengganu (Tanjong Dungun, September 20 and Kemamun River, October 2, 1900); five males in the Mergui Archipelago (Chance Island, December 28, 1899; Helfer Island, March 5, 1900; Bentinck Island, March 12, 1900; and Hastings Island, December 12, 1900).

Male specimens from Java and the Malay Peninsula are more purplish above than specimens from southeastern Siam. Bangkok birds are intermediate. The difference is gradual from south to north and is not constant.

The females like the males average a little deeper yellow below with less grayish throats, in the south, though individual specimens can be picked out of either series that exactly match. The grayish or yellowish tone of the upper plumage, especially the head, is largely due to season—yellowish in fall and winter and grayish in summer. In my opinion the differences between the two series are too elusive to warrant naming separately.

Five males from western Java measure: Wing, 64–66 (65); tail, 43–47 (45.4); culmen, 16.5–17.5 (17) mm. Seven males from Trengganu and Trang: Wing, 64.5–70 (67.3); tail, 43–46 (44.3); culmen, 16.5–18 (17.2) mm. Ten males from Koh Chang, southeastern Siam: Wing, 63.5–68 (65.8); tail, 43–47 (44.4); culmen, 16.5–17.5 (17) mm. These measurements show practically no difference in size between the three series.

A young female taken at Bangkok, May 4, is of about adult size. It differs from the adult female in being more yellowish above and below and in having the feet light colored.

This form ranges from Java and some of the islands south of the Malay Peninsula to Sumatra, the Malay States, north through Peninsular Siam to Tenasserim and Arakan, eastward through southern Siam, and southeastern Siam to Cambodia, Cochinchina, and southern Annam.

Count Gyldenstolpe[51] reports it common throughout the whole country, but I presume there must be some mistake. It is a bird of moderate elevations and does not apparently range far from the sea. Dr. Smith did not secure any in northern or eastern Siam. Robinson and Kloss [52] say they did not meet with it north of Victoria Point but have no doubt it extends north to Bangkok. Herbert [53] found it breeding near Bangkok, nesting from early February to the end of August. Robinson reports it for Koh Samui and Koh Pennan,[54] off Bandon: Pulo Terutau and Pulo Telibun [55]; Koh Kut and Klong Menao.[56]

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[51] Ibis, 1920, p. 463.

The species has been divided into a number of more or less closely related forms.

ANTHREPTES RHODOLAEMA RHODOLAEMA Shelley

Anthreptes rhodolaema SHELLEY, A monograph of the Nectariniidae, p. 313, pl. 101, fig. 1, 1878 (Malacca and Sumatra).

Dr. W. L. Abbott secured two males in Trang, one at Lay Song Hong, August 21, 1896, and the other simply labeled Trang, January 28, 1899.

H. C. Raven collected a series of six males and three females in Dutch Northeast Borneo; these when compared with the two Trang males present some differences. The pileum and mantle of the Bornean males are coppery green with little or no purple iridescence, while the two Trang males have these parts darker green with a shining light vinaceous-purple; the rump of the Bornean males is a shining anthracene violet while that of the Trang males is a shining hays blue with a violet wash on the tail coverts; and there are some other minor differences. The Bornean bird evidently belongs to a different form, which has been named *A. r. aenea.*

Robinson and Kloss [57] found the form common at Chong, Trang. Apparently not much is known of its habits. It ranges sparingly from Tenasserim south through Peninsular Siam to the Malay States and Sumatra.

The male is easily distinguished from the male of *A. m. malacensis* by the red cheeks, deeper brighter red of the throat, the deeper brighter and more abundant red on the wing coverts, and the greener yellow of the underparts. In the female the lowerparts are dull citrine instead of lemon yellow.

Robinson and Kloss [57] say that it is found farther inland than *A. m. malacensis,* which is more or less of a coast bird.

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[52] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 380, 1924.

[53] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 221, pl. 16, 1923.

[54] Journ. Federated Malay States Mus., vol. 5, p. 152, 1915.

[55] Journ. Federated Malay States Mus., vol. 7, p. 190, 1917.

[56] Ibis, 1915, p. 757.

[57] Ibis, 1911, p. 76.

ARACHNOTHERA CHRYSOGENYS COPHA Oberholser

Arachnothera chrysogenys copha Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 20, 1912 (Tapanuli Bay, northwestern Sumatra).

Arachnothera chrysogenys astilpna Oberholser, Journ. Washington Acad. Sci., vol. 13, p. 227, 1923 (Bok Pyin, Tenasserim).

Arachnothera chrysogenys intensiflava Baker, Bull. Brit. Orn. Club, vol. 46 p. 14, 1925 (Kossoom, Tenasserim).

Dr. W. L. Abbott took one male and one female in Trang, February 24, 1899; and three males at Bok Pyin, Tenasserim, February 14, 17, 1900. He gives the soft parts as: Iris brown; bill dark horn brown; a narrow yellow line along the commissure; feet fleshy, claws dark horn brown.

This small series does not appear to differ from a larger series from Sumatra. A small series from the Kateman River, eastern Sumatra, differs somewhat from three males from the type locality. They appear to be more yellowish above and below. They were taken in September, and I attribute the differences to season.

Three males from Trang (1) and Tenasserim (2) measure: Wing, 82.5–87 (84.2); tail, 35.5–40 (38.2); culmen, 37.5–40.5 (39.2) mm. Five males from Sumatra: Wing, 82–89.5 (85.9); tail, 35.5–38.5 (37.4); culmen, 36–38.5 (37.4) mm.

The form ranges from Tenasserim south through Peninsular Siam to the Malay States and Sumatra.

Ogilvie-Grant [58] records it from Patani; Robinson and Kloss [59] from Trang; Robinson [60] from Kao Nawng, 1,200 feet, Bandon; Robinson and Kloss [61] from Tapli; de Schauensee [62] from Nakon Sritamarat.

ARACHNOTHERA MAGNA MAGNA (Hodgson)

Cinnyris magna Hodgson, Indian Rev., vol. 1, p. 272, 1836 (Nepal).

One male, Khun Tan, September 9, 1930; one male, Doi Nangka, November 20, 1930; one female, Pang Meton (Doi Nangka), May 4, 1931; two males, Doi Hua Mot, August 19–21, 1924.

These specimens have been compared with an unsexed specimen from Nepal and a male from Tenasserim. The Nepal bird is probably a female; allowing for this, the northern Siam birds seem to me to agree with it better than they do with the Tenasserim male. The four males from Siam are a little larger, measuring: Wing, 92–94 (93); culmen, 42–45 (43.8) mm. One male from Tenasserim measures: Wing, 90; culmen, 40 mm. A male from the Selangor-Pahang boundary is as large as the northern Siam specimens: Wing, 93; culmen, 44 mm. It is less heavily streaked above, however, and in this respect agrees with the Tenasserim male. Two females from southern Annam are more greenish yellow above and I believe belong to another race. As a matter of fact, my series is not adequate for me to make any definite decision, and under the circumstances I believe it is better to place the northern Siamese specimens under *A. magna magna* rather than under *A. m. aurata.*

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[58] Fasciculi Malayenses, pt. 3, p. 72, 1905.

[59] Ibis, 1911, p. 77

[60] Journ. Federated Malay States Mus., vol. 5, p. 110, 1915.

[61] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 386, 1924.

[62] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 242, 1934.

Just what the range of this form is I do not know, but probably: Himalayas from Nepal to Assam, northern Burma, and northern Siam.

Gyldenstolpe[63] secured it at Bang Hue Hom, northern Siam, and observed it in eastern Siam. On his second expedition[64] he took it at Chienghai, Khun Tan, and Doi Par Sakeng. De Schauensee[65] on his third expedition secured a series at Chiengdao and Chiengmai and says that curiously enough on Doi Sutep none were seen until February 28 and that during summer it apparently became common. Lowe[66] records it from 28 miles east of Umpang.

ARACHNOTHERA AFFINIS MODESTA (Eyton)

Anthreptes modesta Eyton, Proc. Zool. Soc. London, 1839, p. 105 (Malacca).
Arachnothera affinis heliophilus Oberholser, Journ. Washington Acad. Sci., vol. 13, p. 226, 1923 (Loh Sidoh Bay, northwestern Sumatra).

Two males and two females, Bukit, Patani, January 25, 1931; one male, Kao Luang, Nakon Sritamarat, July 14, 1928; one male, Tha Lo, Bandon, September 17, 1931; two immature males, Sichol, Bandon, May 17, 1930.

Dr. W. L. Abbott collected four males and three males in Trang (Lay Song Hong, December 14, 1896; Chong, January 24, 1897; Trang, February 4–5, 1897, and January 28, 1899); two females, Endau River, east coast of Johore, July 1, 18, 1901; and one male, Boyces Point, Tenasserim. He gives the colors of the soft part as: Iris brown; bill brownish black above, pale brown beneath; feet pale brownish fleshy, claws pale horn brown.

There seems to be little or no difference in color between Malay Peninsula specimens and those from Sumatra. A larger series of the latter possibly might show some difference in size.

Seven males from Peninsular Siam measure: Wing, 81.5–86 (83); tail, 44–52 (47.7); culmen, 35–40 (37.6) mm. Three males from Sumatra: Wing, 81–83 (82.3); tail, 46–50 (47.3); culmen, 33–35 (34). The females are considerably smaller than the males. Seven females from Peninsular Siam (5) and Johore (2) measure: Wing, 70–77.5 (73.4); tail, 39.5–46 (42); culmen, 33–35.5 (34) mm. Three females from Sumatra: Wing, 72–75 (73.2); tail, 39–42 (40.8); culmen, 31–32.5 (31.7) mm.

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[63] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 44, 1913.

[64] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 34, 1916.

[65] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 242, 1934.

[66] Ibis, 1933, p. 281.

The Peninsular Siam series compared with *A. a. affinis* of Java is more greenish (yellowish citrine) rather than old gold above, and below it is more yellowish, less grayish, with the streaks on the throat and chest finer and less sharply defined.

The two immature males from Sichol are nearly full grown. They resemble the adult, except that the throat and chest are without streaks and the bill is shorter.

A. a. modesta ranges from Sumatra and the Malay States northward through Peninsular Siam to Tenasserim.

Ogilvie-Grant [67] has recorded it from Patani; Robinson [68] from Kao Nawng, 3,500 feet, Bandon; Robinson and Kloss [69] from Kao Luang, Nakon Sritamarat, 2,000 feet, and later [70] from Tasan, Chumporn.

ARACHNOTHERA ROBUSTA ROBUSTA Müller and Schlegel

Arachnothera robusta Müller and Schlegel, Verhandelingen over de natuurlijke Geschiedenis der Nederlandsche overzeesche Bezittingen, p. 68, pl. 11, fig 1, 1844 (Sumatra).

One male, Waterfall, Trang, August 25, 1933.

Dr. W. L. Abbott took three females in Trang, January 27–February 24, 1899. He gives the soft parts as: Iris dark brown; bill black; feet dull black, blackish brown, or very dark fleshy brown.

Robinson and Kloss [71] report taking four males in Chong, Trang, and say that these are the northernmost on record. The same authors [72] say that it is quite common in Trang but decidedly rare throughout the rest of the Peninsula.

I have not examined any specimens from Sumatra or Borneo.

The species ranges from Trang, Peninsular Siam, south to the Malay States, Sumatra, and Borneo.

ARACHNOTHERA CRASSIROSTRIS (Reichenbach)

Arachnocestra crassirostris Reichenbach, Handbuch der speciellen Ornithologie, Scansoriae, p. 314, pl. 592, fig. 4016, 1854 (Sumatra, Robinson and Kloss).

Dr. W. L. Abbott collected four males and two females in Trang (Prahmon, March 23, 1896; Tyching, July 22, 1896; Lay Song Hong, September 10, 1896; and Trang, February 1, 1897, and January 19, 1899.) He gives the soft parts as: Iris dark brown; bill black, base of lower mandible steely blue, pale horny brown, or pale leaden; feet fleshy brown or brownish olive.

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[67] Fasciculi Malayenses, pt. 3, p. 72, 1905.

[68] Journ. Federated Malay States Mus., vol. 5, p. 109, 1915.

[69] Journ. Federated Malay States Mus., vol. 11, p. 63, 1923.

[70] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 385, 1924.

[71] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 382, 1924.

[72] Ibis, 1911, p. 78.

Robinson and Kloss [73] report a male from Tasan, Chumporn, Peninsular Siam, and go on to say that the species is of considerable rarity in the Malay Peninsula. It is probably not uncommon in Trang, as Dr. Abbott secured the above specimens in three different years in the Province.

The female from Prahmon differs from the other female (and the males) in having the chest deep olive-buff and the throat colonial buff. The other female has the throat and chest pale lemon-yellow, with a deep olive-buff undertone. In the males the yellow of the chest and throat and the olive-buff undertone are somewhat deeper in color. In two of the males the deep olive-buff undertone is nearly absent altogether.

The four males measure: Wing, 72.5–83 (77.6); tail, 44–45 (44.4); culmen, 32–35 (33.6) mm. The two females: Wing, 64–66; tail, 37–38.5; culmen, 30–32 mm.

A male from the Siak River, eastern Sumatra, has a deeper cast to the chest, grayish rather than olive-buff; it has the appearance of not being fully adult. A male and unsexed specimen from Borneo do not seem to differ appreciably from Peninsular Siam birds.

The species ranges from northern Peninsular Siam south to the Malay States, Sumatra, and Borneo.

ARACHNOTHERA LONGIROSTRIS ANTELIA Oberholser

Arachnothera longirostris antelia Oberholser, Journ. Washington Acad. Sci., vol. 13, p. 227, 1923 (Trang, Lower Siam).

Arachnothera longirostris heliocrita Oberholser, *ibid.*, p. 228 (Selitar, Singapore Island).

One male and one female, Patalung, July 8, 1929; two males, Kao Luang, Nakon Sritamarat, July 13, 17, 1928; one unsexed, Ban Kiriwong, Nakon Sritamarat, July 13, 1928; one male, Kao Soi Dao, Trang, January 15, 1934; one male and two females, Tha Lo, Bandon, September 22, 27, 1931; one female, Sichol, May 17, 1930; three females, Nong Khor, Sriracha, September 27, October 1, 1925; one female, Klong Yai, Sriracha, July 22, 1932; one female, Ban Tarn Dam, Sriracha, March 4, 1930; two males, Kao Seming, Krat, December 31, 1929 and January 1, 1930; one female, Kao Sabep, November 1, 1933.

Dr. W. L. Abbott collected six males in Trang, January 31, February 6 and 13, 1897, December 31, 1898, and January 1 and 20, 1899; one male and two females in Tenasserim (Victoria Point, January 3, 1900; Victoria Island, January 5, 1900; and Maliwun, March 25, 1900); three males, Selitar, Singapore Island, May 14–21, 1899; one male, the Dindings, Straits of Malacca, April 16, 1900; one male, Endau River, east coast of Johore, July 1, 1901. He gives the soft parts as iris dark brown or reddish brown; upper mandible black, lower mandible leaden; feet leaden blue.

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[73] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 387, 1924.

The three males from Singapore Island (the type series of *heliocrita*) show no constant differences in plumage from the series from farther north in Peninsular Siam. The bills are rather short, especially that of the type, but the other two can be matched by more northern examples. Singapore Island is too small and near the mainland, with no physiographical peculiarities, to support a distinctive race of this genus.

Two males and one female (including the type of *A. l. melanchima* Oberholser) from East Sumatra are somewhat darker above than the Trang series, and it is quite likely a larger series would show other differences. The specimens measure beyond the average for mainland birds, so for the present I will not consider the name for the mainland race.

The specimens from Tenasserim and southeastern Siam apparently do not differ from Peninsular Siam examples except that the latter appear to be somewhat smaller.

Five males from Singapore Island (3) and the Malay States (2) measure: Wing, 62.5–70.5 (67.4); tail, 40–43 (41.7); culmen, 33–40.5 (36.6) mm. Ten males from Peninsular Siam (9) and Tenasserim (1): Wing, 62–69 (66); tail, 39–44 (41.2); culmen, 35–40.5 (37) mm. Two males from East Sumatra: Wing, 70–72.5; tail, 42–44; culmen, 39–40 mm.

I have examined no specimens from India, except the three Tenasserim birds listed above and two additional males from the same province. It is quite possible that *A. pusilla* Blyth is the proper name for the Siamese form.

A. l. antelia ranges from southeastern Siam and southern Tenasserim through Peninsular Siam to the Malay States.

Family CHALCOPARIIDAE: Rubycheeks

CHALCOPARIA SINGALENSIS KORATENSIS Kloss

Chalcoparia singalensis koratensis Kloss, Ibis, 1918, p. 218 (Lat Bua Kao, eastern Siam).

One male, Bangkok, July 7, 1924; two males and one female, Pak Chong, May 11, 1925, November 20, 27, 1929; two males and one female, Lam Klong Lang, Pak Chong, June 5, 11, 1925; one male, Tha Chang, Pak Chong, March 18, 1927; one male, Sakeo, near Krabin, May 3, 1928; two males and two females, Lat Bua Kao, August 7–9, 1929; two males and two females, Nong Khor, near Sriracha, September 27–October 1, 1925, March 20, 1926; one female, Hupbon, near Sriracha, May 25, 1925; one female, Chantabun May 27, 1929; one male and three females, Kao Seming, Krat, October 10, 16, 1928; one male, Kao Sabap, October 30, 1933; two males, Aranya, July 13, 1930; one male, Nontaburi, March 22, 1924.

This form is similar to *C. s. interposita* of Peninsular Siam, but the brown of the throat ends rather abruptly on the chest, and the breast is deeper, brighter yellow.

Ten males from eastern and southeastern Siam measure: Wing, 52–55 (53.2); tail, 37–42 (39.4) culmen, 12–14 (13) mm. Nine males from Peninsular Siam (*interposita*): Wing, 53–55.5 (54); tail, 38–41 (39.7); culmen, 13.5–14 (13.8) mm.

C. s. koratensis ranges in Siam east of the Menam to southeastern Siam, Laos, Tonkin, Annam, Cambodia, and Cochinchina.

Herbert [74] found it breeding in Bangkok, Samkok, and Pakret, nesting from February to July.

CHALCOPARIA SINGALENSIS INTERPOSITA Robinson and Kloss

Chalcoparia singalensis interposita Robinson and Kloss, Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 209, 1921 (Takuapa, west coast Peninsular Siam).

One male and one female, Bangnara, Patani, July 19, 1926; one male, Bukit, Patani, January 26, 1931; one male, Nakon Sritamarat, September 16, 1926; two males, Huey Yang, October 1, 1930; three males, Tha Lo, Bandon, September 14, 25, 1931; one female, Koh Lak, June 14, 1933; two males, Pran, April 1, 2, 1931; one male, Doi Angka, 2,000 feet, December 8, 1928; one female, Chiengmai, November 25, 1928; one male, Kumpawapi, February 17, 1929; two males, Muang Pai, December 17, 27, 1932.

Dr. W. L. Abbott took two males in Trang, February 5, 1897 and December 31, 1898; and one male, at Tanjong Badak, Tenasserim, January 8, 1900.

This form has the brown of the throat extending down onto the chest and breast, ending in a rather indefinite manner.

The few birds from northern Siam in the above series seem to go with the Peninsular Siamese specimens.

C. s. singalensis (type locality, Malacca) is confined to the Malay States and apparently does not reach Peninsular Siam. There are no male specimens of this form in the United States National Museum. According to Robinson,[75] it is duller than *interposita*.

C. s. interposita ranges from Patani, in the south, north through Peninsular Siam and Tenasserim to northern Siam and probably the Shan States.

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[74] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 293, pl. 18, 1924.

[75] The birds of the Malay Peninsula, vol. 1, p. 313, 1927.

Family DICAEIDAE: Flowerpeckers

DICAEUM CRUENTATUM IGNITUM (Begbie)

Nectarinia ignita Begbie, The Malayan Peninsula . . ., p. 518, 1834 (Malacca).
Dicaeum cruentatum siamensis Kloss, Ibis, 1918, p. 216 (Lat Bua Kao, eastern Siam).

One male and one female, Bukit, Patani, January 23, 25, 1931; four males, Bangnara, Patani, July 17, 18, 1926; one male, Patalung, July 10, 1929; one male and one female, Nakon Sritamarat, September 17, 26, 1926; one male, Huey Yang, October 1, 1930; one female, Koh Pangan, July 25, 1931; two males, Pran, April 1, 2, 1931; one female, Nongkae, February 18, 1929; one male, Rajaguri, April 10, 1926; one male, Ban Pong, September 18, 1929; 15 males and nine females, Bangkok, February 1 and July 5, 1924, December 28, 1925, May 26–June 1, and October 26, 1926, April 30–May 12, 1934; one male, Montaburi, March 22, 1924; one female, King Pai, Korat, February 16, 1929; two males, Pak Chong, May 10, 1926; two males, Khlung, Chantabun, January 3, 1930; one male and one female, Lem Sing, Chantabun, June 9, 1926; one male, Kao Seming, Krat, January 2, 1930; two females, Koh Chang, January 4, 1924, June 16, 1926; one male, Sakeo, near Krabin, May 4, 1928; four males and three females, Ban Nan Kien, Nan, April 19–22, 1930; one male, Nan, April 16, 1930; one male and one female, Sam Roi Yot, November 19, 1932; one male, Mae Hong Sorn, January 6, 1933; one male, Muek Lek, April 19, 1933.

Dr. Abbott collected nine males and three females in Trang (Prahmon, February 27, March 4, and April, 1896; Tyching, May 25 and July 8, 1896; near Chong, January 20 and 24, 1897; near base Kao Nom Plu, March 9, 1897; Trang, February 13, 1897, January 5 and 21, 1899); two males and one female, Dungun River, Trengganu, September 19, 1900; one male, Pulo Langkawi, December 6, 1899; one male, Pulo Adang, Butang Islands, December 16, 1899; one male and one female, Tenasserim, (Victoria Point, March 30, 1900 and Tanjong Badak, December 11, 1903).

After carefully comparing a series of specimens from northern, eastern, and Peninsular Siam, I cannot find any constant tangible differences. Peninsular birds are said to be darker on the breast, but some of the darkest-breasted specimens in the above series are from the north and the lightest-breasted from Patani. I find on examining the dates that the dark-breasted birds are taken in fall or winter and the light breasted in summer, and these differences are probably due to fading rather than being ecologic. There seems to be little or no difference in size. No specimens have been examined from India, except Tenasserim.

Ten males from the Malay Peninsula, from the Malay States to Trang, measure: Wing, 46–50.3 (48.7); tail, 22.5–26.5 (24); culmen, 10–11 (10.3) mm. Eight males from east and southeast Siam: Wing, 45–49 (47); tail, 23–26 (24.2); culmen, 9.5–10.5 (10.2) mm. Eight males from northern Siam: Wing, 46–50 (47.9); tail, 23–27.5 (24.6); culmen, 10–11 (10.6) mm.

There are two immature specimens in the series taken at Bangkok, a male taken May 9 and a female taken May 4. They resemble the adult female except the upper and lower parts are tinged olive-green, the red of the rump is reduced, and the base of the bill is light colored. The female is the younger of the two and more olive-green.

Just what the exact range of this form is I am not certain. It evidently ranges from the Malay States north through Peninsular Siam to Tenasserim, Burma, and all Siam proper and east into Cambodia, Cochinchina, Laos, Tonkin, and Annam.

DICAEUM IGNIPECTUM (Blyth)

Myzanthe ignipectus Blyth (Hodgson MS), Journ. Asiat. Soc. Bengal, vol. 12, p. 983, 1843 (Nepal and Bootan).

One male and one female, Khun Tan, 4,000 feet, February 22, 1932; one female, Mae Hong Sorn, January 5, 1933; one male, Khun Tan Mountains, 4,000 feet, May 9, 1933; two females, Doi Hua Mot, August 21, 1934.

Dr. W. L. Abbott took a male and a female on Kao Nom Plu, 3,000 feet, Trang, February 22, 26, 1897; and a male labeled simply Trang, January 20, 1899.

The United States National Museum possesses a good series of this species from western and southern China but only one male from the rest of its range outside of Siam. The Chinese specimens do not differ materially from those of Siam. The one male referred to above is from the Langbian Peaks, southern Annam. It is a bluish green above, while the Siamese males are a coppery green, but I think this an age difference rather than a geographic. In the Chinese series mentioned above there are two immature males that have almost assumed the adult plumage and the back is coming in a shining coppery green while in an adult male (no. 306396), Mount Omei, July 9, the upperparts are bluish green like those of the South Annam male. It is possible that only the very old males assume this bluish green plumage, as in an extensive series the above are the only specimens in this plumage.

This bird has been reduced to the rank of a form of *Dicaeum sanguinolentum* of Java by some recent authors, but the latter is quite distinct. The back is a glossy purple instead of coppery and there are other differences.

D. ignipectum has an extensive range, from the western Himalayas east through western and southern China to Fukien, south through all of French Indo-China to southern Annam, Siam, Peninsular Siam, and the Malay States.

Count Gyldenstolpe [76] says it is extremely rare and hitherto only recorded from Patalung in Peninsular and from Khun Tan in northern Siam. Deignan [77] reports it common on Doi Sutep from 5,000 to 5,500 feet, and less so down to 4,000 feet. De Schauensee [78] found it on the summit of the same mountain and occasionally as low as 3,500 feet. Robinson [79] says that it is found from Perak to southern Selangor and Pahang and is strictly confined to the zone above 3,500 feet. He doubts the locality Patalung first given by Bonhote, as the altitude is too low.

DICAEUM BECCARII CAMBODIANUM Delacour and Jabouille

Dicaeum beccarii cambodianum DELACOUR and JABOUILLE, Bull. Brit. Orn. Club, vol. 48, p. 135, 1928 (Bokor, southern Cambodia).

Dicaeum umbratile RILEY, Proc. Biol. Soc. Washington, vol. 43, p. 191, 1930 (Kao Kuap, near Krat, southeastern Siam).

One male, Kao Kuap, Krat, December 24, 1929.

The above specimen is the type of *D. umbratile* named upon the supposition that *D. beccarii cambodianum* did not have the black line down the side of the chest at the shoulder, but M. Delacour has written me that the Cambodian race has such a line and that the bird named by me is undoubtedly the same. While I am placing my name in synonymy for the present, I call the attention of authors to certain discrepancies between the plate published by Delacour and Jabouille [80] and my type. The plate is much greener above and has a whiter throat than the type of *umbratile;* in fact, the latter has not a white throat at all, but cream-buff. It may or may not be the same. Only a comparison of specimens of the two can decide definitely, but as the two type localities are in the same type of country, I now feel that probably M. Delacour is correct.

Dicaeum beccarii Robinson and Kloss was described in 1916 from Korinchi, Sumatra, but M. Delacour [81] believes a specimen from Gunong Tahan, Pahang, belongs to this species.

Robinson and Kloss [82] have published a plate of *D. beccarii*, and it is a much greener-backed and a browner-breasted bird than the type of *D. umbratile*, it lacks the black streak on the side of the chest at the shoulder, and the cheeks are brownish rather than fuscous. The known range of *D. b. beccarii* is separated by several hundred miles from *D. b. cambodianum.* They are both mountain forms, so far as known, and much of the intervening country would be unsuitable.

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[76] Ibis, 1920, p. 466.

[77] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 156, 1931.

[78] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 243, 1934.

[79] The birds of the Malay Peninsula, vol. 2, p. 277, 1928.

[80] Oiseaux l'Indochine Française, vol. 3, pl. 34, 1931.

[81] L'Oiseau, new ser., vol. 2, p. 438, 1932.

[82] Journ. Federated Malay States Mus., vol. 7, pt. 2, pl. 7, 1918.

D. b. beccarii and *D. b. cambodianum* differ from *D. ignipectum* by the absence of the scarlet chest patch in the male. The female is described as resembling the same sex of *D. ignipectum* but is grayish blue-bronze above and a paler fawn color below.

The range of *D. b. cambodianum* is the mountains of southeastern Siam, the Plateau Bolovens, southern Laos, and southwestern Cambodia.

DICAEUM TRIGONOSTIGMUM TRIGONOSTIGMUM (Scopoli)

Certhia trigonostigma Scopoli, Deliciae florae et faunae insubricae, pt. 2, p. 91, 1786 (China, error; Robinson and Kloss [83] restrict it to Malacca).

Two males and one female, Bangnara, Patani, July 19, 21, 1926.

Dr. W. L. Abbott collected seven males and three females, Trang (Prahmon, February 22 and April 5, 1896; Lay Song Hong, September 9, 1896; Chong, January 21, 1897; Kao Soi Dao, 1,000–1,500 feet, February 9 and 15, 1899; Trang, February 15, 1897, January 6 and 21, 1899); one male, Singapore Island, May 2, 1899.

The specimens from Trang seem to agree with birds from the south better than they do with the next form to be considered (*rubropygium*), from Tenasserim. The northern limit of the southern race cannot be much north of Trang, as a specimen from Bandon seems to belong to the northern form.

The present form evidently ranges from Sumatra and the Malay States north in Peninsular Siam to Trang.

A number of other named forms occur on the islands off the west coast of Sumatra, Java, the Anamba Group, Natuna Islands, and Borneo. In the Philippine Islands a number of closely related species occur.

DICAEUM TRIGONOSTIGMUM RUBROPYGIUM Baker

Dicaeum trigonostigma rubropygium Baker, Bull. Brit. Orn. Club, vol. 41, p. 108, 1921 (Mergui).

One male, Ban Kiriwong, Nakon Sritamarat, July 10, 1928; one male, Sichol, Bandon, September 5, 1929.

Dr. W. L. Abbott collected three males in the Mergui Archipelago (Chance Island, December 27, 1899; Bentinck Island, March 8, 1900).

The males from the Mergui Archipelago have the breast and middle of the back a deeper orange than those from Trang southward. With the northern form I would place the male from Bandon listed above. The male from Nakon Sritamarat is immature but assuming the adult plumage which is near completion.

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[83] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 383, 1924.

There seems little if any difference in size between the northern and southern Malay Peninsular forms. Eleven males from Rhio Archipelago (1), Singapore (1), Patani (2), and Trang (7) measure: Wing, 46–52 (48.6); tail, 19.5–23.5 (21.8); culmen, 10.5–11 (10.8) mm. Four males from Mergui Archipelago (3) and Bandon, Peninsular Siam (1): Wing, 46–52 (49.7); tail, 20.5–24 (22.6); culmen, 10–11 (10.5) mm.

Stuart Baker [84] says this form occurs in Assam in a restricted area (Lakhimpur) and then does not occur again until the Karen Hills and Pegu, Burma, are reached; thence it occurs to southern Tenasserim, and Peninsular Siam as far as Bandon and Nakon Sritamarat on the eastern coast and Ghirbi and Junkseylon (Puket) on the western coast. The last two localities are cited on the authority of Robinson and Kloss.[85]

DICAEUM CHRYSORRHAEUM CHRYSORRHAEUM Temminck

Dicaeum chrysorrhaeum Temminck, Nouveau recueil de planches coloriées d'oiseaux, livr. 80, pl. 478, 1829 (Java).

Dr. W. L. Abbott collected two males and one female, Trang, February 14, 15, 1897, and January 3, 1899.

This race is found in Peninsular Siam south of latitude 10° N., the Malay States, Sumatra, Java, and Borneo.

Robinson [86] records it from Terutau and Trang; Robinson and Kloss [87] from Nong Kok, Ghirbi.

DICAEUM CHRYSORRHAEUM CHRYSOCHLORE Blyth

Dicaeum chrysochlore Blyth, Journ. Asiat. Soc. Bengal, vol. 12, p. 1009, 1843 (Arracan).

One male, Kao Seming, Krat, October 10, 1928.

This specimen is much brighter above than the Peninsular race (*chrysorrhaeum*); below the streaks are finer, the throat whiter, and the under tail coverts a deeper yellow.

The form ranges from latitude 10° N. in Peninsular Siam northward through Siam to Burma and eastward to Cochinchina, Annam, and Tonkin.

Count Gyldenstolpe [88] records it from Koh Lak; Robinson and Kloss [89] from Nam Chuk, Pakchan Estuary; Williamson [90] from Bangkok and Mueklek; Baker [91] examined specimens from Mueklek and Krabin. Deignan[92] found it but twice on Doi Sutep at 3,500 feet.

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[84] The fauna of British India, Birds, ed. 2, vol. 3, p. 425, 1930.

[85] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 388, 1924.

[86] Journ. Federated Malay States Mus., vol. 7, p. 189, 1917.

[87] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 119, 1919.

[88] Kungl. Svenska Vet.-Akad. Handl.. vol. 56, no. 2, p. 36, 1916.

[89] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 390, 1924.

[90] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 212, 1917.

[91] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 416, 1919.

Though generally distributed in Siam proper, it is not often taken by collectors.

DICAEUM CONCOLOR OLIVACEUM Walden

Dicaeum olivaceum Walden, Ann. Mag. Nat. Hist., ser. 4, vol. 15, p. 401, 1875 (Tonghoo and Karen Hills).

One male, Chiengmai, November 25, 1928; two females, Lampang, November 17, 1928; one female, Khun Tan Mountains, 4,000 feet, May 9, 1933.

A male and female from Laos, one male from Tonkin, and a female from Daban, South Annam, are darker and duller above and considerably lighter below than the above Siamese series. The two specimens from Laos and the male from Tonkin are in worn and faded plumage, but the South Annam female is in unworn and fresh plumage. The three Siamese females are much more buffy below than the male, but the South Annam female is darker and more brownish, less greenish above, especially on the head and back, and more grayish, less buffy, below than even in the Siamese male. The difference between it and the Siamese females is even more pronounced.

The four specimens from Siam measure: Wing, 43–46 (44.6); tail, 20–24 (21.4); culmen, 9–10 (9.6) mm. The two from Laos, one from Tonkin, and one from South Annam: Wing, 43.5–46.5 (45.7); tail, 19–22.5 (20.9); culmen, 8–9.5 (9) mm.

The form ranges in the Himalayas from Nepal to Assam, south to Burma, Yunnan, Siam, South China, Laos, Tonkin, South Annam, Tenasserim, Peninsular Siam, the Malay States, and Sumatra.

Gyldenstolpe[93] says that it is quite common in northern Siam. Deignan[94] reports it common on the plain at Chiengmai and on Doi Sutep to 2,700 feet. Robinson and Kloss[95] say that it has not been yet obtained from the country between Moulmein (Tenasserim) and Penang, though in both these places it is not uncommon. De Schauensee[96] states that it is found commonly in the foothills and occasionally up to 5,500 feet at Chiengmai and Khun Tan.

CHARITOCIRIS PERCUSSA IGNICAPILLA (Eyton)

Dicaeum ignicapilla Eyton, Proc. Zool. Soc. London, 1839, p. 105 (Malaya).

Two males and one female, Bangnara, Patani, May 15, 1924, July 16, 1926; one male and one female, Bukit, Patani, January 23, 25, 1931; one male, Tha Lo, Bandon, September 27, 1931.

Dr. W. L. Abbott collected four males and one female at Lay Song Hong, Trang, September 2–December 8, 1896; and one immature male at Trang, January 21, 1899. He gives the soft parts as: Iris grayish brown; upper mandible black, lower mandible leaden; feet leaden.

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[92] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 156, 1931.

[93] Ibis, 1920, p. 466.

[94] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 156, 1931.

[95] Journ. Siam Soc. Nat. Hist., vol. 5, p. 391, 1924.

[96] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 244, 1934.

In addition to the above, I have examined only one male from Borneo and one from Sumatra; they do not seem to differ materially from Peninsular Siamese birds.

One of the males collected by Dr. Smith at Bangnara (no. 307436) and another male from Bukit are passing from an immature plumage into that of the adult and have almost completed the change; the Bangnara male is in a more advanced state than the other. In the Bukit male the upperparts are changing from a plumage similar to that of the female to the blue back of the male and the process is about half completed; the wings and tail are like the adult female; the red crown spot is appearing; below, the yellow of the adult has appeared, but the color is not so bright; the scarlet chest spot is appearing but is barely indicated. The Bangnara male is just farther advanced; there are only a few feathers of the immature plumage remaining; the scarlet crown patch is like that of the adult male; below it is like that of the adult male but is not so bright, nor is the scarlet chest spot so large. This Bangnara male has some white feathers over the right eye, but there are none on the left side.

One of Dr. Abbott's specimens from Trang is still younger (no. 169944, January 21). It is like the adult female, but there are a few blue feathers appearing on the upper back and rump and there is no indication of a crown patch; below it is like the adult female, except it is not so yellowish especially the throat. There is no sign of the scarlet chest spot.

Robinson and Kloss[97] record a male from Tasan, Chumporn, Peninsular Siam, and say that it is the northernmost specimen recorded. De Schauensee[98] lists it from Nakon Sritamarat; Baker[99] from Tung Song; Ogilvie-Grant[1] from Patani.

The form ranges from southern Tenasserim south through Peninsular Siam to the Malay States, Sumatra, Borneo, Natuna Islands, and probably other nearby islands of the China Sea.

CHARITOCIRIS MACULATA MACULATA (Temminck)

Pardalotus maculatus Temminck, Nouveau recueil de planches coloriées d'oiseaux livr. 101, pl. 600, fig. 3, 1836 (Borneo).

Dr. W. L. Abbott collected an adult male at Tanjong Silantei, east coast of Johore, July 26, 1901. He gives the soft parts as: Iris red; bill black; leaden beneath at base.

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[97] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 392, 1924.

[98] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 244, 1934.

[99] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 416, 1919.

[1] Fasciculi Malayenses, pt. 3, p. 74, 1905.

This specimen has been compared with six males from Borneo and one male from Sumatra. From the Bornean specimens it differs in being darker above, the coronal spot a deeper orange; below the differences, if any, are not great; the bill is longer. From the Sumatran male it differs only in being slightly darker above and having a longer bill. Whether these differences would hold in a larger series is problematical.

The male from Johore measures: Wing, 52.5; tail, 26; culmen, 11.5 mm. The male from Sumatra: Wing, 52.5; tail, 23; culmen, 10 mm. The six males from Borneo: Wing, 50–54 (51.6); tail, 22–24.5 (23); culmen, 9.5–10.5 (10) mm.

C. m. maculata has been recorded from Kedah, Perlis, and some of the other Malay States, but it is doubtful whether it extends to Peninsular Siam; it is also doubtful whether the form occurring in Borneo and Sumatra is the same as that inhabiting the Malay States. It is quite likely that the latter should be separated.

CHARITOCIRIS MACULATA SEPTENTRIONALIS (Robinson and Kloss)

Prionochilus maculatus septentrionalis Robinson and Kloss, Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 206, 1921 (Tasan, Chumporn, Peninsular Siam).

One male and one female, Bangnara, Patani, July 14, 17, 1926; one male, Bukit, Patani, January 25, 1931

Dr. W. L. Abbott collected three males and two females in Trang (Lay Song Hong, September 9, 1896, December 8, 27, 1896; Trang, February 2, 1897, January 3, 1899). He gives the following note on the soft parts: Bill black, leaden at the base beneath; feet dark leaden.

The three specimens from Patani do not differ materially from those of Trang. A small series from Borneo of *C. m. maculata* does differ considerably from Peninsular Siamese birds as follows: The male is more of a yellowish citrine above rather than dull citrine and the crown spot is orange-chrone rather than scarlet; below, the throats are yellower, and there are other differences, but I have given enough to show they are quite different races.

Four males from Peninsular Siam measure: Wing, 51.5-56 (53.6); tail, 22.5–26.5 (24.6); culmen, 10.5–11 (10.9) mm.

C. m. septentrionalis ranges from southern Tenasserim through Peninsular Siam to the east coast of Patani.

It does not seem to have been recorded much farther north than the type locality; Tapli, Packchan Estuary, being only a little north and west.[2] Apparently it is not a common bird. It has been recorded from Kao Nawng, Bandon, by Robinson;[3] Kao Ram, 1,200 feet,

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[2] Robinson and Kloss, Journ. Nat. Hist. Siam, vol. 5, p. 392, 1924.

[3] Journ. Federated Malay States Mus., vol. 5, p. 110, 1915.

Nakon Sritamarat, by Robinson and Kloss;[4] and by de Schauensee from the same state.[5] Baker[6] lists it from Klong Wan Hip.

PIPRISOMA MODESTA MODESTA (Hume)

Prionochilus modestus Hume, Stray Feathers, vol. 3, p. 298, 1875 (southern Tenasserim).

Dr. W. L. Abbott took three males and one female in Trang, December 29, 1898, and January 3, 1899. He gives the color of the soft parts as: Iris pale yellowish brown; bill leaden at base, black at tip; feet black.

The only specimen available for comparison outside of Siam is a female from southern Sylhet, Assam. It is more dull citrine above rather than the saccardo olive of the Peninsular specimens and has fewer and fainter streaks below. It is certainly not the same as the Peninsular bird.

The two males and one female from Trang measure: Wing, 55–63 (59.2); tail, 25.5–32 (29); culmen, 8.5–9 (8.7) mm. The single female from Assam: Wing, 56.5; tail, 25; culmen, 8 mm.

Just what range the present form has is not definitely known. I believe it is confined to northern Siam, southern Tenasserim, and south through Peninsular Siam to the northern Malay States.

Gyldenstolpe[7] took a single male at Khun Tan, May 17, 1914, but whether it should be placed with the Peninsular form, the eastern form, or belongs to another race, I am unable to say. It is the only record from northern Siam I have seen. Robinson and Kloss[8] record a male from Tasan, Chumporn, and five specimens from Tapli, Pakchan Estuary.

P. m. finschii (Bartels) (*P. m.* subsp. *remotum* Robinson and Kloss) is found in the Malay States, Sumatra, and western Java. I have seen no specimens of this form. It is said to be darker and duller, with little or no white on the tail. Possibly it occurs in Patani.

PIPRISOMA MODESTA PALLESCENS Riley

Piprisoma modesta pallescens Riley, Proc. Biol. Soc. Washington, vol. 48, p. 148, 1935 (Pak Chong, eastern Siam).

One female, Tha Chang, March 14, 1927; one female, Pak Chong, November 26, 1929.

The United States National Museum also possesses a female from Ok Yam, Franco-Siamese Boundary, collected by C. Boden Kloss.

These three specimens differ from the two males and one female from Trang mentioned above as follows: Paler and more grayish above; more whitish below, the streaks narrower; the under tail coverts much paler.

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[4] Journ. Federated Malay States Mus., vol. 11, p. 63, 1923.

[5] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 241, 1934.

[6] Journ. Nat. Soc. Siam, vol. 3, p. 417, 1919.

[7] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 36, 1916.

[8] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 392, 1924

There is not much or any difference in size. The three specimens measure: Wing, 57.5–59 (58.2); tail, 27–29 (27.7); culmen, 8–9 (8.3) mm.

Williamson[9] records specimens from Bangkok and Muaklek, but whether the Bangkok record belongs here or to the Peninsular form I am not able to state. Baker[10] records it from Pak Chong and Krabin. Kloss[11] collected four females at Ok Yam.

The form is probably confined to eastern Siam, extending into Indo-China.

Family ZOSTEROPIDAE: White-eyes

ZOSTEROPS PALPEBROSA WILLIAMSONI Robinson and Kloss

Zosterops palpebrosa williamsoni Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, vol. 3, p. 445, 1919 (Meklong, central Siam).

One adult male, five immature males, and one adult female, Nakon Sritamarat, September 16–24, 1926; six males and 12 females, Bangkok, March 29–April 3, 1934.

The adults from Nakon Sritamarat agree fairly well with the series from Bangkok, though the latter are more worn. Dr. Smith writes that they suddenly appeared in some numbers around Bangkok for a few days and then disappeared, probably one of those erratic wanderings in search of food. They seem to be in worn plumage like birds that had already passed through a breeding period.

The immatures from Nakon Sritamarat are almost duplicates of the adult, except in size; all but one have a slight indication of a yellow streak on the belly.

The adult male from Nakon Sritamarat measures: Wing, 54; tail, 33; culmen, 11 mm. The female: Wing, 52; tail, 32; culmen, 10.5 mm. Six males from Bangkok: Wing, 51–54 (52.2); tail, 33.5–36 (34.5); culmen, 11–11.5 (11.2) mm. Ten females from Bangkok: Wing, 51–54.5 (53); tail, 32.5–35 (34); culmen, 10.5–11 (10.9) mm.

The series resembles *Z. p. palpebrosa* but is duller and more greenish above, lighter and more whitish below.

The form was first described from central Siam and in the original description one was recorded from Koh Rah, Takuapa, west coast of Peninsular Siam and Batu, Selangor. Robinson[12] gives it for Patani; Delacour and Jabouille[13] record it from Cambodia, Annam, Tonkin, and Laos.

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[9] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 213, 1917.

[10] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 416, 1919.

[11] Ibis, 1915, p. 756.

[12] The birds of the Malay Peninsula, vol. 1, p. 316, 1927.

[13] Oiseaux l'Indochine Française, vol. 4, p. 176, 1931.

ZOSTEROPS PALPEBROSA CACHARENSIS Baker

Zosterops palpebrosa cacharensis BAKER, Ibis, 1922, p. 144 (Gujong, northern Cachar).

Zosterops palpebrosa vicinia RILEY, Proc. Biol. Soc. Washington, vol. 42, p. 162, 1929 (Summit Doi Sutep, Siam).

One male and one female, summit Doi Sutep, December 15, 1928; two males and one female, Doi Hua Mot, August 29, September 1, 1934.

This form was described by me as *Z. p. vicinia* as similar to *Z. p. palpebrosa* but lighter, more yellowish above, flanks less grayish, the chest suffused with a yellowish wash, with a well-pronounced yellow streak down the center of the chest; wing, 54; tail, 36.5; culmen, 11 mm.

Since the original description was published, Chasen and Kloss [14] have questioned the validity of the form. The three specimens from Doi Hua Mot are molting; the new feathers appearing on the throat and upperside are somewhat deeper yellow than the old feathers, but that the three specimens belong to this form there is no doubt. De Schauensee [15] secured a series at Chiengmai, Chiengdao, and the southern Shan States and states that *cacharensis* and *vicinia* are the same. I think he is correct, as I was originally misled by Ticehurst lumping the former with *palpebrosa*.

Deignan [16] reports it not uncommon on Doi Sutep from 3,500–5,500 feet. He also mentions that an unidentified species occurs on the plain in winter. This is probably *Z. japonica sinensis*, which Dr. Smith collected at Chiengmai.

ZOSPEROPS AUREIVENTER AUREIVENTER Hume

Zosterops aureiventer HUME, Stray Feathers, vol. 6, p. 519, 1878 (Tavoy).

Dr. Abbott collected a male on Telibon Island, Trang, February 25, 1896.

The United States National Museum also possesses a male from Pulo Pintu Gedong, Selangor, October 29, 1912.

The male from Trang is more greenish, not so yellowish above as the Selangor male; below they are much alike, but the bill in the latter is longer. The Trang male measures: Wing, 52.5; tail, 31; culmen, 10.5 mm. The male from Selangor: Wing, 53; tail, 33; culmen, 12 mm.

Robinson [17] has noticed these differences and states that the bird of the Malay States belongs to another form that does not go much farther north than Penang, but he does not name it. Robinson and Kloss [18] record *aureiventer* from Koh Rah, Peninsular Siam.

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[14] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 248, 1932.

[15] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 239, 1934.

[16] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 154, 1931.

[17] The birds of the Malay Peninsula, vol. 1, p. 316, 1927.

[18] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 394, 1924.

The form evidently ranges along the coast from southern Tenasserim south in Peninsular Siam to Trang or a little farther.

ZOSTEROPS JAPONICA SINENSIS Swinhoe

Zosterops sinensis SWINHOE, Ibis, 1861, p. 331 (for *Zosterops japonicus* Swinhoe, Ibis, 1861, p. 35).

Zosterops simplex SWINHOE, Ibis, 1861, p. 331 (after the above, on the same page, and for the same form).

Two males, Chiengmai, November 25, 1928; one male and three females, Lampang, November 17, 1928; one female, Doi Nangka, November 9, 1930.

This particular race is a much more greenish-backed bird above than forms of *palpebrosa*, the yellow of the forehead is wider, and the throat and under tail coverts are paler. It is almost certain that de Schauensee's [19] records of *Z. simplex williamsoni* from Chiengrai, Chiengdao, Chiengsen, and the southern Shan States, belong to this form.

Whether this form is resident or only a winter visitor to Siam is not known, so far as I am aware. In South China it is resident, but farther north it is migratory, and the birds found in Siam in the winter may be migrants from farther north.

The form is found from North China south to Burma, Siam, Laos, Tonkin, and Annam.

I follow Stresemann [20] in placing this as a form of *japonica*, as this seems to be the best arrangement so far proposed.

Family PLOCEIDAE: Weaverbirds

PLOCEUS PHILIPPINUS INFORTUNATUS Hartert

Ploceus passerinus infortunatus HARTERT, Nov. Zool., vol. 9, p. 577, 1902 (Sungei Lebeh, Pahang).

One male and one female, Bukit, Patani, January 26, 1931; one male, Patalung, July 6, 1929; one male, Koh Samui, Bandon, August 7, 1931; one male, Rajaguri, April 10, 1926; three males and three females, Bangkok, June 17, 1923; April 7, 8, 1924, April 1, 10, and June 2, 1926; one female, Bung Borapet, June 21, 1932; two males and four females, Prae, April 11, 1930.

Dr. W. L. Abbott collected the following: Two males and one female, Tyching, Trang, May 16, 23, and June 2, 1896; two males and two females, Tanjong Kalong, Singapore, April 17 and March 4, 1900. He took two sets of three eggs each, May 16; one set of four eggs, May 26; one set of three eggs, one set of two eggs, and one single, June 23; all in 1896 in Trang, probably from the same colony. The first three sets are marked as incubation commenced or advanced.

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[19] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 563; 1930; vol. 86, p. 240, 1934.

[20] Mitt. Zool. Mus. Berlin, vol. 17, Heft 2, p. 207, 1931.

Dr. Abbott gives the soft parts as: Iris dark brown; bill black (male), horny yellow (female); feet flesh color, claws horny brown.

Ten males from the Malay Peninsula and Central Siam measure: Wing, 65–72.5 (70); tail, 41–48.5 (46.9); culmen, 16.5–17.5 (17) mm. Eight females from the Malay Peninsula and Central Siam: Wing, 66–72 (68.6); tail, 41.5–47 (44.4); culmen, 16–17 (16.7) mm.

There are only two males from northern Siam. They measure: Wing, 71–73 mm. The four females from northern Siam have wing measurements of 68, 68, 68.5, and 69 mm.

The wings of the Malay Peninsula specimens average slightly smaller than those from central and northern Siam, but the difference is very slight. The latter are probably intergrades toward the northern Burmese form, *P. p. burmanicus* Ticehurst, but nearer the Malay race.

P. p. infortunatus ranges from Java, Sumatra, and the Malay States northward through Peninsular Siam to Tenasserim, southern Burma, eastern Bengal and Siam and eastward to Laos, central Annam, and Cochinchina. In Siam it occurs practically throughout the country from the northern boundary south to Patani and beyond and is resident.

Herbert[21] reports it common in the vicinity of Bangkok, breeding in colonies from the first half of May until as late as August 22, according to season. He describes the nest and eggs.

PLOCEUS MANYAR PEGUENSIS Baker

Ploceus manyar peguensis BAKER, Bull. Brit. Orn. Club, vol. 45, p. 58, 1925 (Pegu).

One male, Bung Borapet, June 24, 1932.

This specimen is in nonbreeding plumage and has been compared with a pair from Java of *P. m. manyar* in similar plumage. It is less buffy on the chest and flanks, and the abdomen is more extensively white.

Gyldenstolpe[22] records it from Chienghai, northern Siam. Williamson[23] reports it resident at Bangkok, where Herbert[24] says it is fairly numerous, breeding from mid-June to as late as September 11, and describes the nest and eggs.

Probably this weaverbird is of local occurrence, as there are few records for Siam proper and none at all for Peninsular Siam.

The form ranges from the Himalayan foothills from Garhwal to eastern Annam, Bengal, Burma, Yunnan, Siam, Cambodia, and Annam.

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[21] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 115, 1923.

[22] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 29, 1916.

[23] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 192, 1917.

[24] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 118, 1923.

PLOCEELLA HYPOXANTHA CHRYSAEA (Hume)

Ploceus chrysaeus Hume, Stray Feathers, vol. 6, p. 399, 1878 (Tenasserim).

Eleven males and five females, Bung Borapet, June 19–30, 1932.

The males in this fine series when compared with two males from Java have the edges of the mantle feathers of a more greenish, less pure yellow; the pileum is darker on the average, and the chest is more tinged with raw sienna. The mainland form is somewhat larger, though a larger series from Java may not uphold this.

Eleven males from Siam measure: Wing, 66–69 (67.5); tail, 49–56 (47.5); culmen, 15–16.5 (15.5) mm. Five females: Wing, 61–65.5 (61.9); tail, 44.5–47 (45.5); culmen, 14–15 (14.4) mm. Two males from Java: Wing, 65–65.5; tail, 47.5–51; culmen, 15.5–16 mm.

No specimens from Sumatra have been available for examination. The mainland form from Tenasserim northward is separated by a wide stretch of territory where no birds of the genus are known to occur, from the form that occurs in Java and Sumatra.

P. h. chrysaea has been taken only in Siam at Bung Borapet and Samkok. Herbert [25] found it breeding in colonies at the latter place from the first week in June until August 13, and he describes the nests and eggs.

The form ranges from Tenasserim to Upper Burma and Pegu, Siam, Cambodia, and Cochinchina.

A closely related form, *P. h. hypoxantha* (Sparrman) is found in Sumatra and Java.

PADDA ORYZIVORA (Linnaeus)

Loxia oryzivora Linnaeus, Systema naturae, ed. 12, p. 302, 1766 (Asia and Ethiopia; probably Java).

One female, Bangkok, October 11, 1924.

De Schauensee [26] secured an immature male at Bangkok, September 23.

These are the only two records for Siam known to me.

A female was received from Dr. W. L. Abbott collected by C. Boden Kloss at Singapore, March 14, 1900.

This species has been introduced into so many parts of Asia and Africa that it is rather hard to tell just what its original range was.

Robinson [27] states it was probably originally wild in Java, Bali, and Sumatra.

It is now found wild in the Malay States, central Siam, Indo-China, southern China, the Philippines, St. Helena, and eastern Africa.

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[25] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 119, 1923.

[26] Proc. Acad. Nat. Sci., Philadelphia, vol. 81, p. 560, 1930.

[27] The birds of the Malay Peninsula, vol. 1, p. 288, 1927.

MUNIA MAJA MAJA (Linnaeus)

Loxia maja LINNAEUS, Systema naturae, ed. 12, vol. 1, p. 301, 1766 (India orientali; Malacca).

One male, Pak Bhayoon, Tale Sap, July 11, 1929.

Dr. W. L. Abbott collected four adult males, one immature male, and four females in Trang (Tyching, May 20, 1896; Lay Song Hong, December 1, 1896; near base of Kao Nom Plu, March 9, 1897; Trang, March 7, 8, 1897); one male, the Dindings, Straits of Malacca, April 15, 1900; one male, Tanjong Dungun, Trengganu, September 18, 1900. He gives the soft parts as: Iris dark brown; bill horny or leaden blue; feet dark leaden blue.

This species is very variable. In the adults there are two plumages, one in which the back is sorghum brown and the other in which it is walnut brown. The upper tail coverts vary from claret brown to a mars yellow; the latter color is usually old and worn and appears to be replaced by the claret brown. The majority of the specimens examined have the head and chest washed with wood brown, deepest on the latter, only the forehead and around the eyes whitish. A few specimens have the head white, and rarely the head and chest are white.

The immature male listed above from Trang was collected March 9. The lower parts are cinnamon-buff; back sayal brown, the pileum buffy brown; wings and tail dusky edged with the color of the back.

A small series from Java is hardly, if at all separable, from the mainland bird.

The form ranges from Trang and Patalung in Peninsular Siam south to the Malay States, Sumatra, and Java. It is a Malayan form, and the specimens taken by Dr. Abbott and Dr. Smith are the northernmost on record.

MUNIA ATRICAPILLA ATRICAPILLA (Vieillot)

Loxia atricapilla VIEILLOT, Histoire naturelle des-plus beaux oiseaux chanteurs de la zone torride, p. 84, pl. 53, 1805 (Les Grandes Indes; restricted by Robinson and Kloss [28] to lower Bengal).

One adult male and one immature male, Bung Borapet, June 20, 24, 1932.

This form is much darker, both above and below, than *sinensis;* the middle of the breast and belly is black or fuscous; and the longer upper tail coverts are chestnut. The immature male taken June 24 is buffy but is already molting into the adult plumage.

Whether the form of northern Siam belongs to *M. a. rubronigra* Hodgson I do not know, as I have seen no specimens from that part of the country. Chasen and Kloss [29] seem to regard Vieillot's name as an earlier name for it, and I am employing it in this sense.

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[28] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 362, 1924.

[29] Bull. Raffles Mus., no. 2, p. 23, 1929.

In northern Siam I have seen but two records, both by Gyldenstolpe—one from northern Siam without locality[30] and the other from Chienghai and Chiengsen.[31] Williamson[32] records it as rare at Bangkok. Herbert[33] found it breeding at Dookanong, Samkok, and Ayuthia, in June and July, and describes the nest and eggs. Robinson and Kloss[34] record three males and four females from Koh Lak. De Schauensee took two pairs at Bung Borapet in June and gives the wings as 55, 54, 52, and 55.5 mm. Dr. Smith's male measures: Wing, 53; tail, 33.5; culmen, 11.5 mm.

The range of the form is eastern Bengal to Burma, Annam, Siam proper, and Indo-China.

MUNIA ATRICAPILLA SINENSIS Blyth

Munia sinensis Blyth, Catalogue of the birds in the museum Asiatic Society, p. 337, 1849 (1852) (Penang; founded on Edwards, pl. 43).

One male and one immature female, Bangnara, Patani, July 19, 1926; one male and two females, Patalung, July 9, 1929.

Dr. W. L. Abbott collected two females, Tyching, Trang, May 26, 1926; one male and one female, the Dindings, Straits of Malacca, April 13, 1900; one male, Dungun River, Trengganu, September 24, 1900; one set of three eggs, Rumpin River, Pahang, July 3, 1902. He gives the soft parts as: Iris dark brown or reddish brown; bill horn blue or leaden; feet dark blue or leaden.

This series is much lighter above and below than *M. a. atricapilla;* the black patch on the belly is absent; and the longer upper tail coverts are aniline yellow, inclining to xanthine orange or amber-brown in two or three specimens.

In the series of nine adults of *M. a. sinensis* only two have a definite dark patch on the belly, and even then it is not black but more of a chocolate. The sexes are alike.

The nine adults measure: Wing, 47.5–54 (51.8); tail, 29–34.5 (30.7); culmen, 11–12 (11.5) mm.

This form ranges from the Malay States northward as far as Trang at least, but how much farther it is impossible to say.

MUNIA STRIATA ACUTICAUDA Hodgson

Munia acuticauda Hodgson, Asiat. Res., vol. 19, p. 153, 1836 (Nepal).

One female, Doi Hua Mot, August 23, 1934; one male and one female, Ban Nam Kien, Nan, April 20, 1930; one male and one female, Aranya, July 13, 14, 1930; two males (one immature), Bangkok, October 27, 30, 1925; one male, Sriracha, April 19, 1934.

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[30] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 170, 1915.

[31] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 27, 1916.

[32] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 193, 1917.

[33] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 121, 1923.

[34] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 362, 1924.

This form is slightly less heavily streaked on the breast and the upper tail coverts are brown rather than black when compared with Malay Peninsula birds.

The four males and three females measure: Wing, 48–50 (49.4); tail, 40–42.5 (41.3); culmen, 11–11.5 (11.2) mm.

This form ranges in the Himalayan foothills from Garhwal to eastern Assam, eastern Bengal, northern Burma, and Siam proper; to the eastward it probably extends into Indo-China.

It has not been possible to compare these with Nepalese material, but all the birds from northern and central Siam seem to be the same and to differ somewhat from Malay Peninsula specimens. The male from Sriracha is somewhat darker above, with darker upper tail coverts, but it seems to be nearer the northern form than to that of the Malay Peninsula.

Herbert[35] reports it breeding in the fruit gardens near Bangkok from the early part of the rains to December and describes the nest and eggs.

MUNIA STRIATA SUBSQUAMICOLLIS (Baker)

Uroloncha striata subsquamicollis Baker, Bull. Brit. Orn. Club, vol. 45, p. 59, 1925 (Bankasoon, Tenasserim).

Uroloncha acuticauda lepidota Oberholser, Journ. Washington Acad. Sci., vol. 16, p. 520, 1926 (Tyching, Trang).

One male, Bukit, Patani, January 26, 1931; one unsexed, Ban Kiriwong, Nakon Sritamarat, July 12, 1928.

Dr. W. L. Abbott collected three males, three females, and one unsexed in Trang (Tyching, May 23–June 25, 1896; near base of Kao Nom Plu, March 9, 1897; Trang, March 8, 1897). He gives the soft parts as: Iris dark red; upper mandible black, lower mandible leaden or leaden blue; feet leaden or dull brown.

This series is slightly darker above, more streaked on the breast, and the upper tail coverts are darker than specimens from northern Siam, *M. s. acuticauda.* These differences are average; specimens can be picked out of both series that almost match. The form is not a strongly marked one. Apparently there is little or no difference in size. Ten specimens from Peninsular Siam measure: Wing, 47.5–52 (49.7); tail, 36–42 (40); culmen, 10.5–12 (11).

Dr. Abbott took a nest and three eggs May 31 and a nest and five eggs June 25, 1896; both at Tyching, Trang.

This form ranges from southwestern Siam (Koh Lak) and southern Tenasserim south through Peninsular Siam to the Malay States.

The United States National Museum has a male specimen of this form from Koh Lak collected by C. Boden Kloss. Robinson and Kloss[36] record it from Tapli, Pakchan, and Tasan, Chumporn;

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[35] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 121, 1923.

[36] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 363, 1924.

Robinson from Koh Samui and Koh Pennan off Bandon and from the opposite mainland.[37]

MUNIA STRIATA SWINHOEI (Cabanis)

Uroloncha swinhoei CABANIS, Journ. für Orn., 1882, p. 462 (China).

Uroloncha squamicollis SHARPE, Catalogue of the birds in the British Museum, vol. 13, p. 359, 1890 (China, Formosa, and Hainan; type from Chingchow, Szechwan [38]).

One female, Muck Lek, April 19, 1933.

This specimen agrees fairly well with specimens from Szechwan, China, and evidently belongs to this form, which is very variable according to season. *M. s. swinhoei* differs principally from *acuticauda* in having the chest feathers a much lighter brown, with broader and lighter edges. Gyldenstolpe [39] refers a male from Khun Tan, April 29, and a female from Bang Hue Pong, May 27, to this form. These specimens require reexamination, as his description does not agree with the average type of *swinhoei*, which averages lighter not darker than *acuticauda*, but, as remarked above, the former is very variable. As a matter of fact, this Muck Lek female is a little darker above and about the head than the average *swinhoei*, but the specimen is nearer it than it is to the two other Siamese races. Whether it is a migrant, resident, or only a stray to Siam is not known.

This form is resident in southern China, south of the Yangtze, and not known to migrate.

MUNIA PUNCTULATA TOPELA Swinhoe

Munia topela SWINHOE, Ibis, 1863, p. 380 (Amoy).

Three adult males, two immature males, six adult females, and one immature female, Bangkok, May 3 and September 25, 1924, October 29, 1925, May 28, June 2, 22, September 7, and October 25, 1926, and May 3, 1934; one adult male and one immature female, Chiengmai, November 24, 25, 1928.

No Chinese specimens are available for comparison, but I have two males from southern Annam. Specimens from this region are assigned to *M. p. topela* by Delacour and Jabouille [40] and as the Bangkok series agrees fairly well with them, this name is used.

The form ranges practically all over Siam proper and as far to the southwest as Koh Lak, beyond which I have seen no records. In the southeast it has been recorded from Sriracha.[41] Deignan [42] says that it is a common resident at Chiengmai, breeding during the rains. Herbert [43] found it breeding at Bansakai throughout the rainy season and describes the nest and eggs.

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[37] Journ. Federated Malay States Mus., vol. 5, p. 151, 1915.

[38] Oberholser, Journ. Washington Acad. Sci., vol. 16, p. 521, 1926.

[39] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 28, 1916.

[40] Oiseaux l'Indochine Française, vol. 4, p. 230, 1931.

[41] Williamson, Journ. Nat. Hist. Soc. Siam, vol. 2, p. 194, 1917; de Schauensee, Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 235, 1934.

[42] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 152, 1931.

The form ranges from southern China to Indo-China, Siam proper, and southern Burma.

The species is very plastic and breaks up into a number of related forms.

MUNIA PUNCTULATA FRETENSIS Kloss

Munia punctulata fretensis KLOSS, Treubia, vol. 13, livr. 3–4, p. 363, 1931 (Kuala, Lumpur, Selangor).

One male, one female, and one unsexed, Tanjong Kalong, Singapore, October 3, 1899, and March 6, 1900, collected by C. Boden Kloss and received through Dr. W. L. Abbott. Mr. Kloss gives the soft parts as: Iris brown or red; upper mandible black, lower dark lavender or blue-gray; feet lavender-gray or dark lavender.

This small series differs from *M. p. nisoria* of Java in having the throat, face, and crown darker and the barring below narrower.

Just what is the range of this race is uncertain. The original describer says that it ranges northward toward the Isthmus of Kra and is found in Sumatra.

I have seen no records from Peninsular Siam, but it is to be expected to occur in the southern part at least.

MUNIA LEUCOGASTRA LEUCOGASTRA (Blyth)

Amandina leucogastra BLYTH, Journ. Asiat. Soc. Bengal, vol. 15, p. 286, 1846 (Malacca).

One male, Haad Yai, July 12, 1929; one male and one female, Tha Lo, Bandon, September 17, 1931.

This form ranges from Tavoy, Tenasserim, south through Peninsular Siam to Singapore.

Robinson and Kloss [44] record it from Mamoh, Pakchan, and Tasan. From the remainder of Peninsular Siam the records are few or absent, because of the habits of the race; it is said to be more or less of a forest bird and probably escapes observations on this account.

A closely related form, *M. l. leucogastrioides* Horsfield and Moore, is found in Java.

AMANDAVA AMANDAVA DECOUXI Delacour and Jabouille

Amandava amandava decouxi DELACOUR and JABOUILLE, Bull. Brit. Orn. Club, vol. 48, p. 134, 1928 (Siemreap, Cambodia).

Ten males and 13 females, Bung Borapet, June 21–24, 1932; March 24–25, 1932.

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[43] Journ. Nat. Hist. Soc. Siam, vol. 6, p. 122, 1923.

[44] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 363, 1924.

The only male specimen in this large series that is beginning to have an approach to the adult breeding plumage is one collected on June 24. The head, throat, and chest have some of the red adult feathers coming in, especially on the head. This specimen compared with one from India is more carmine red, and the spots on the wings, rump, and tail are smaller and reduced in number. For this reason I am provisionally referring them to the Cambodian form.

De Schauensee[45] also took specimens at the same locality in June and comments on the fewness of the spots on the wings.

The exact range of the form is a little uncertain. So far it is known from Cambodia, Cochinchina, Tonkin, and central Siam.

Deignan[46] collected a specimen at Chiengmai on June 1, 1935, which he assigns to *A. a. amandava;* it has not been compared with Indian specimens, however.

PASSER FLAVEOLUS Blyth

Passer flaveolus, Blyth, Journ. Asiat. Soc. Bengal, vol. 13, p. 946, 1844 (Arrakan).

Two males, Ban Pong, September 17, 18, 1929; three males and three females, Bangkok, October 3, 8, 1924, April 5, 6, and May 26, 31, 1926; two males, Bung Borapet, March 21, 1933; two males and one female, Lomkao, February 20, 21, 1934; one male, Korat, March 28, 1929; one male, Pak Chong, May 9, 1925; one male and one female, Knong Phra, Pak Chong, April 10, 12, 1929; one male, Pak Chong, May 9, 1925, one male, Tha Chang, March 16, 1927; one male, Muek Lek, April 16, 19, 1933; one male, Nongkae, May 6, 1929.

Two of the above females from Bangkok are young not long from the nest and were collected May 26 and 31.

There are two types of coloration in the males, one in which the chest and flanks are deep olive-buff; only the center of the breast and belly light yellow. The other has all the lowerparts rather bright yellow, a little obscured on the chest and flanks. The two styles do not seem to be confined to season or locality. I rather think the first style is the first adult plumage of the immature male.

The species ranges from Arrakan and Pegu to Burma, Siam, Cambodia, Laos, Cochinchina, and Annam.

In Siam it has been taken practically all over the country except in the Peninsula, where it has been taken only in the northern part. Williamson[47] records it as a resident at Bangkok and lists it also from Muek Lek and Sriracha; and later from Hua Hin, Pran, and Nongkae in southwestern Siam.[48] Gyldenstolpe[49] took a female at Khun

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[45] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 235, 1934.

[46] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 127, 1936.

[47] Journ. Nat. Hist. Soc. Siam, vol. 2, p. 196, 1917.

[48] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 44, 1918.

[49] Kungl. Svenska Vet-Akad. Handl., vol. 56, no. 2, p. 29, 1916.

Tan; Deignan[50] says it is common in the ricefields at Chiengmai, where de Schauensee also has taken it on all three of his trips. On his last trip he took it also at Kengkoi and Sriracha.[51] Robinson and Kloss[52] record it from Koh Lak in southwestern and Mamoh in Peninsular Siam. This is as far in this direction as it has been recorded to date.

PASSER MONTANUS MALACCENSIS Dubois

Passer montanus malaccensis DUBOIS, Faune illustrée des vertébrés de la Belgique, p. 574, 1887 (Malacca).

One adult male and one adult female, Yala, Patani, February 2, 1931; four adult males, two immature males, one adult female, and three immature females, Bangkok, April 1, 1926, March 8, 1927, and April 13–May 14, 1934; Nongkae, May 6, 1929. One set of four eggs, Bangkok, February 3, 1929.

The above adults agree fairly well with a pair from Java; except in the Siamese specimens the breast is faintly streaked with brown, making it appear somewhat darker.

This race occurs apparently all over Siam and down Peninsular Siam to the Malay States, but it is rare outside of the larger cities.

Deignan[53] reports it common in Chiengmai and the villages but rare in the open country. Barton[54] lists it from Raheng.

The range outside of Siam seems a little uncertain. It is said to occur at the base of the Himalayas from Kashmir to Assam, southern China, Indo-China, Burma, Siam, and down the Malay Peninsula to the Malay States, Sumatra, Java, Borneo, and the Philippines.

Family FRINGILLIDAE: Sparrows, Finches, etc.

MYCEROBAS MELANOXANTHUS (Hodgson)

Coccothraustes melanoxanthus HODGSON, Asiat. Res., vol. 9, p. 150, 1836 (Nepal).

One male and one female, Doi Hua Mot, August 12, 1934.

Dr. Smith gives the soft parts in the male as: Iris dark brown; bill above dark blue with the tip dark brown, below sky blue; legs blue.

The above pair have been compared with a series from Yunnan and western Szechwan. The male is not so deep a black as the Szechwan specimens, but it is somewhat worn, and a Szechwan male taken at about the same time approaches it; below it is paler yellow on the breast and belly. The female is also slightly paler below than Chinese specimens. Both specimens have shorter wings than the Yunnan-Szechwan series.

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[50] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 152, 1931.

[51] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 236, 1934.

[52] Journ. Nat. Hist. Soc. Siam, vol. 5, p. 360, 1924.

[53] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 152, 1931.

[54] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 106, 1914.

The male measures: Wing, 120; tail, 68; culmen, 23.5 mm. The female: Wing, 118; tail, 63; culmen, 22 mm. Six males from Szechwan and Yunnan: Wing, 126–131 (128.3); tail, 68.5–72 (70); culmen, 22–25.5 (23.5) mm. Five females from the same region: Wing, 121–128.5 (125.6) tail, 68–71 (68); culmen, 21.5–24 (23) mm.

The only specimen I have examined from India is a male without definite locality. It is a very old skin; brownish black above and on the throat and rather pale yellow on the breast and belly. It is unsuitable for comparison. The wing measures 128 mm.

De Schauensee[55] took a male out of a party of four on Doi Sutep, 5,500 feet, March 1. He also found his specimen to be smaller and to differ somewhat from Szechwan examples and believes it probably represents a different form, in which he is most likely right. The wing of his male measured only 118 mm. The wings of two females collected in Laos by the Kelly-Roosevelt Expedition are also small, 118 and 120 mm.[56]

Deignan[57] later found it on Doi Sutep near the summit on May 12 and June 23, 1935, and took a male February 2, 1936. This would seem to make it a resident and not merely a winter visitor.

The species ranges in the Himalayas from Afghanistan to eastern Assam and northern Burma and north to the mountains of western Yunnan and Szechwan; south to northern Siam and northern Laos.

CARPODACUS MURATI Delacour

Carpodacus erythrinus murati Delacour, Bull. Brit. Orn. Club. vol. 47, p. 20, 1926 (Nong-het, Laos).

One immature male, Doi Angka, 4,000 feet, December 3, 1928; one adult male, Kao Pae Pan Nam, Pasak Valley, February 18, 1934.

The adult male has been compared with an adult male from Yunnan taken in September. It is deeper in color both above and below but is assuming the spring breeding dress, while the Yunnan male is in unworn fall plumage. This species is entirely of a different red from *C. e. roseatus*, more pinkish, the pileum near acajou red, not spectrum red. The male measures: Wing, 84; tail, 55; culmen, 11.5 mm. Of the immature male I am not so certain. It is lighter above than immature males of *C. e. roseatus* of about the same age, and probably belongs here.

The species probably breeds in Tibet and migrates through Yunnan to the mountains of Tonkin, Laos, and northern Siam to winter.

It has not been recorded from Siam before, unless some of the records of *C. e. roseatus* really belong here.

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[55] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, pp. 4, 236, 1934.

[56] Field Mus. Nat. Hist., zool. ser., vol. 18, no. 3, p. 118, 1931.

[57] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 127, 1936.

MELOPHUS LATHAMI (Gray)

Emberiza lathami GRAY, Zoological miscellany, p. 2, Feb. 19, 1831 (China and India; type in British Museum from Canton).

One male, Doi Angka, 4,000 feet, December 3, 1928.

This species breeds in the lower Himalayas from Kashmir to Assam and in southern China from Yunnan to Chekiang and thence into Indo-China (Tonkin, Annam, Laos), northern Siam, and the mountains of eastern Burma to Tenasserim. It is said to be resident in southern China, but it is possible it may move a little farther south in winter.

De Schauensee [58] took a male at Chiengrai, January 5, and another male at Chiengsen, January 8, and on his third trip he shot a male at Chiengmai, 4,600 feet, February 7.[59]

Deignan [60] states that it occurs in small numbers on Doi Sutep at 5,500 feet but fails to say at what season of the year. It may breed on the higher mountains of northern Siam. Later Deignan [61] says it was present on Doi Sutep from December 30 to April 1, and goes on to say that he found it common on Doi Angka in April and May and common on the plains about Chiengrai and Chiengsen in April.

EMBERIZA RUTILA Pallas

Emberiza rutila PALLAS, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, pp. 210, 698, 1776 (River Onon, Mongolian border).

One male, Kao Pae Pan Nam, Lomsak, February 9, 1934.

The species breeds in eastern Siberia and northern China and migrates to southern China, Indo-China, Siam, Assam, and Burma to winter.

Gyldenstolpe [62] records it between Denchai and Pak Pan, February 2; Gairdner [63] from the Petchaburi District; Williamson [64] from Sai Yoek; Chasen and Kloss [65] record a single female from Doi Sutep, 5,500 feet. De Schauensee [66] took two specimens on the same mountain at 4,000–5,000 feet, February 28 and March 2. Probably it is an uncommon winter resident in Siam.

EMBERIZA PUSILLA Pallas

Emberiza pusilla PALLAS, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, p. 697, 1776 (Daurian Alps).

One female, Ban Ton, February 27, 1929.

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[58] Proc. Acad. Nat. Sci. Philadelphia, vol. 81, p. 560, 1930.

[59] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 237, 1934.

[60] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 153, 1931.

[61] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 127, 1936.

[62] Kungl. Svenska Vet.-Akad. Handl., vol. 50, no. 8, p. 41, 1913.

[63] Journ. Nat. Hist. Soc. Siam, vol. 1, p. 149, 1915.

[64] Journ. Nat. Hist. Soc. Siam, vol. 3, p. 22, 1918.

[65] Journ. Siam Soc. Nat. Hist. Suppl., vol. 8, p. 248, 1932.

[66] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 236, 1934.

De Schauensee [67] took a male at Chiengdao, 5,000 feet, January 12, and another at Chiengmai, 5,000 feet, February 4; Deignan [68] reports seeing one high up on Doi Angka in April 1931, but did not secure it.

This species breeds in northeastern Europe and northern Asia and migrates south through China to southern China, Indo-China, Siam, Burma, and Bengal to winter.

EMBERIZA AUREOLA Pallas

Emberiza aureola PALLAS, Reise durch verschiedene Provinzen des russischen Reichs, vol. 2, pp. 464, 711, 1773 (Irtisch River, Siberia).

One male, Prae, April 10, 1930; one male, Bangkok, October 30, 1924; one female, Noan Wat, Korat Plateau, February 14, 1929; six males and one female, Knong Phra, Pak Chong, April 12, 13, 1929.

Two of the males from Knong Phra have acquired a plumage approximating the breeding dress, which is assumed in the spring by a complete molt and wear.

This species breeds in Siberia from eastern Russia eastward and migrates through China in great numbers to winter in Indo-China, Siam, Burma, and northern India.

Apparently it is a common winter migrant to Siam and has been taken in Peninsular Siam as far south as Nawngchik, Patani, in November.[69]

Müller [70] records a female from Junkseylon (Puket), May 11, a very late date.

Chasen and Kloss [71] record two males from Raheng. They give no date, but one of the specimens is in the United States National Museum and was taken April 25. Kloss [72] records a male from Koh Kram, October 1916; Gyldenstolpe [73] took a female at Chum Poo, May 2; de Schauensee [74] took a pair at Petrieu, May 6 and 8; Deignan[75] reports it a common winter visitor at Chiengmai and thinks it doubtless occurs regularly.

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[67] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 236, 1934.

[68] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 66, 1935.

[69] Ogilvie-Grant, Fasciculi Malayenses, pt. 3, p. 70, 1905.

[70] Die Ornis der Insel Salanga, p. 34, 1882.

[71] Journ. Siam Soc. Nat. Hist. Suppl., vol. 7, p. 183, 1928.

[72] Ibis, 1918, p. 223.

[73] Kungl. Svenska Vet.-Akad. Handl., vol. 56, no. 2, p. 30, 1916.

[74] Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 236, 1934.

[75] Journ. Siam Soc. Nat. Hist. Suppl., vol. 10, p. 127, 1936.

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